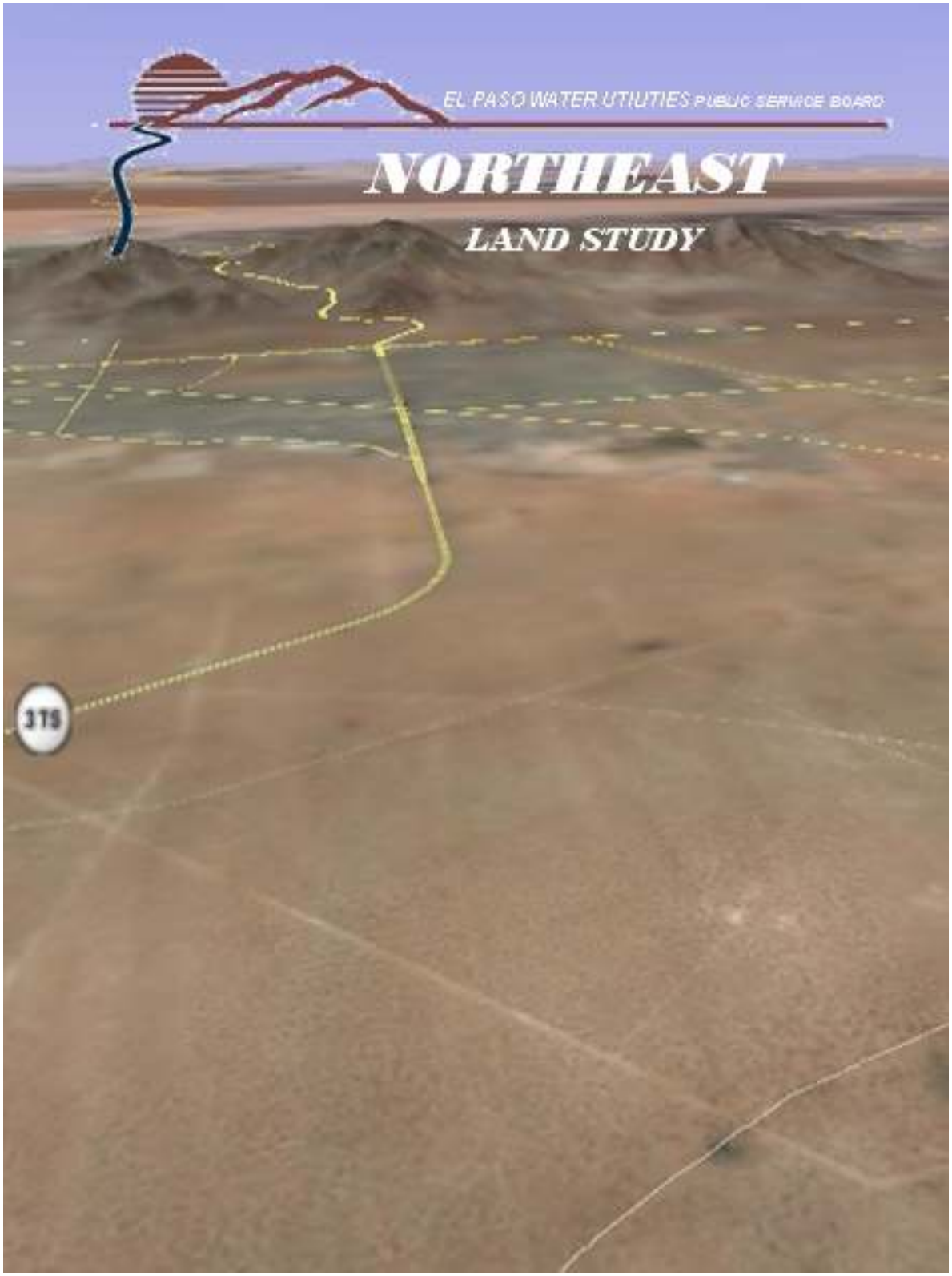
EL PASO WATER UTILITIES PUBLIC SERVICE BOARD
NORTHEAST
LAND STUDY
375

Land Study for Northeast PSB Properties

October, 2006

For Water Sewer & Reclamation Water Planning	For Drainage	For Transportation Network & Traffic Study

URS

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Introduction

INTRODUCTION

PURPOSE

The Northeast Land Study has been prepared in accordance with the requirements of Section 19.08.040 (Land Study Required) of Chapter 19.08 (Platting Procedures) of Title 19 (Subdivisions of El Paso) of the El Paso Municipal Code. It is submitted by El Paso Water Utilities – Public Service Board (EPWU-PSB) for approximately 6975 acres of PSB owned property located in Northeast El Paso (see Figure 1.1).

STUDY AREA LOCATION & DESCRIPTION

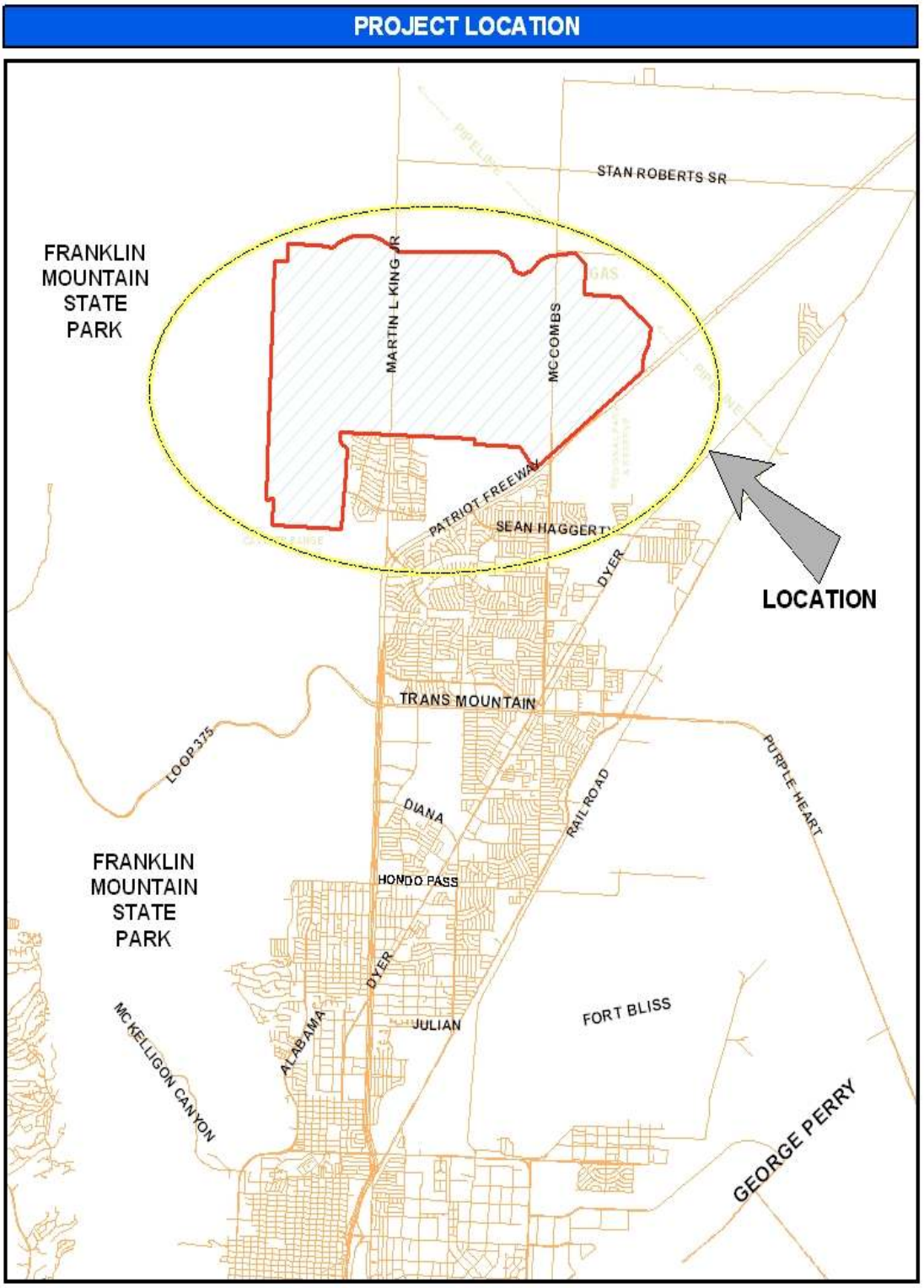
In December 2005, the Public Service Board (PSB) of the El Paso Water Utilities (EPWU) engaged URS Corporation and Goodkin Consulting to prepare a study for the Northeast Master Plan completed by Kimley-Horn Associates and adopted by the City of the El Paso earlier that year.

The project is located in Northeast El Paso. The planning area is located on the east side of the Franklin Mountains, as shown in Figure 1.1 and north of the Patriot freeway (US 54). The study area is bounded to the West by the Franklin Mountain State Park, with approximately 10.0% of the acreage contained in the Planned Mountain Development District.

The Northeast Master Plan establishes an overall vision for the development of EPWU land. This area is comprised of approximately 15,000 acres of land and is located adjacent to Fort Bliss. This Land Study will comprise of only approximately 6,975 acres mentioned previously. This study establishes a strong vision for a well planned community that includes a series of mixed-use residential, commercial and employment center nodes organized around Painted Dunes Golf Course, numerous parks, and an open space and trail systems.

The City of El Paso is currently estimated to have a population of 594,716 people. In 2005, Greater El Paso, defined as El Paso and Dona Ana Counties, had an estimated population of 905,899. While this area had been expected to grow naturally and continue to attract people from across the county to its warm climate and relatively low cost of living, these projections were updated in 2005 when the Base Realignment and Closure (BRAC) Commission announced that Fort Bliss would be realigned to receive more military personnel than any other base in the county.

Military estimates establish that El Paso will receive 21,230 additional military personnel, along with 23,629 dependents, and 1,140 private employees over the



EL PASO WATER UTILITIES | FIGURE 1.1 | NORTHEAST LAND STUDY AREA

next five years. Regional models project the creation of 2.07 jobs for every new military position on the base. Assuming that 50% of these jobs will be filled by new residents to the community because of job importation from other markets and bases, as well as the need for skilled laborers who are currently in short supply, an additional 20,783 people annually will be added to the market during the next five years.

Accounting for the direct, indirect and induced growth due to the expression of Fort Bliss and the previously mentioned projections, the market's projected population would rise to 1,026,446 by 2011. This projection translates into 24,109 people being added to El Paso and Dona Ana Counties on average over the next five years.

Based upon the natural market growth, Fort Bliss expansion, and a competitive survey of other local residential developments, it is estimated that an additional 8,610 for-sale residential units will be needed annually over the next five years to satisfy demand. For purposes of planning for the Northeast project, a capture rate between 9.1 and 11.8% of the annual demand is used, which equates to 780 to 1,020 for–sale units per year.

A range of for-sale housing prototypes will be required to meet demand. As this relates to the Northeast study area, four general product types were identified:

- **Senior:** Product attractive to people over the age of 65
- **Entry-Level:** Targeted at households earning less than $35,000 a year (53% of the greater El Paso market for people under the age of 65)
- **Market Standard:** Housing for households earning between $35,000 and $75,000 a year
- **Luxury:** Housing for households earning over $75,000 per year.

PURPOSE AND INTENT OF THE LAND STUDY AND LAND USE PLAN

The land use plan developed from the land study is intended to establish a frame work for development of the property. The overall goal of the plan is to promote development that results in efficient provision of services, creates compatibility between land uses, provides for a sustainable environment, and enhances the quality-of-life for the future Northeast residents.
Objectives of the study are to:

- Provide for a higher quality of development rather than a piecemeal and scattered pattern of development evident in other parts of the City of El Paso.

- Provide for varying densities and flexibility in the types of housing products.
- Provide a framework for development of the Northeast property that is easy for the City of El Paso to administer and is predictable

in its outcome through the use of the land use plan and accompanying design standards.

- Plan infrastructure and utility development to protect the Open Space Development.

- Provide development that respects the natural environment wherever possible, principally by providing significant areas of open space and leaving the arroyos in their natural state.

- Establish a phasing plan for the overall development of the property and provide land for appropriate public facilities.

- Provide a transportation system that is efficient and facilitates easy access to each part of the development, commercial/employment area, Franklin Mountains State Park, and the Patriot Freeway (US 54).

- Determine service needs for the development of the property.

- Provide a development that creates a sense of community within the development through transportation connections, trails, pedestrian opportunities, access to community facilities, and parks.

LAND STUDY REPORT ORGANIZATION

The organization of this report, to include location of information required under Section 19.08.040 (Land Study Required) of the El Paso Municipal Code, is described as follows.

Section 2: Existing Land Use – Section 2 addresses the existing conditions portions of land study requirements General Arrangement of Existing Land Uses; Layout and Relationship to Surrounding Development; Existing Zoning; and Site Dimensions.

Section 3: Land Use Plan – Section 3 presents the proposed land development plan including land study requirements General Arrangement of Proposed Land Uses; Proposed Density and Population; Layout and Relationship to Surrounding Development; and Proposed Zoning.

Section 4: Water and Sewer – Section 4 describes existing and planned water and sewer facilities that will serve the planning area per land study requirement.

Section 5: Phasing Plan – Section 5 presents the development phasing plan in accordance with land study requirement.

Appendices – The appendices contain design guidelines for:

- Roads & bike paths
- Trails & linear park
- Park-ponds
- Hybrid Channels
- Pocket parks

Exhibits – One copy of full size exhibits as required by the land study and one electronic version of all the figures submitted separately to the City of El Paso.

EXISTING LAND USE

This section of the land study describes the existing site, its surroundings, current and projected land uses, zoning, and existing public facilities in the overall area of the site. Existing transportation and drainage are addressed in this land study in separate volumes.

LAND STUDY SITE

Figure 2.1 is a base map developed for the site and the surrounding area. It shows current and adjacent land ownership, parcels, boundaries, topographic information, orthopography, school district boundaries, mountain/hillside development district boundaries, enterprise zone boundaries, state park boundaries, existing bike/pedestrian trails, and proposed roadway extensions for Painted Dunes Blvd.

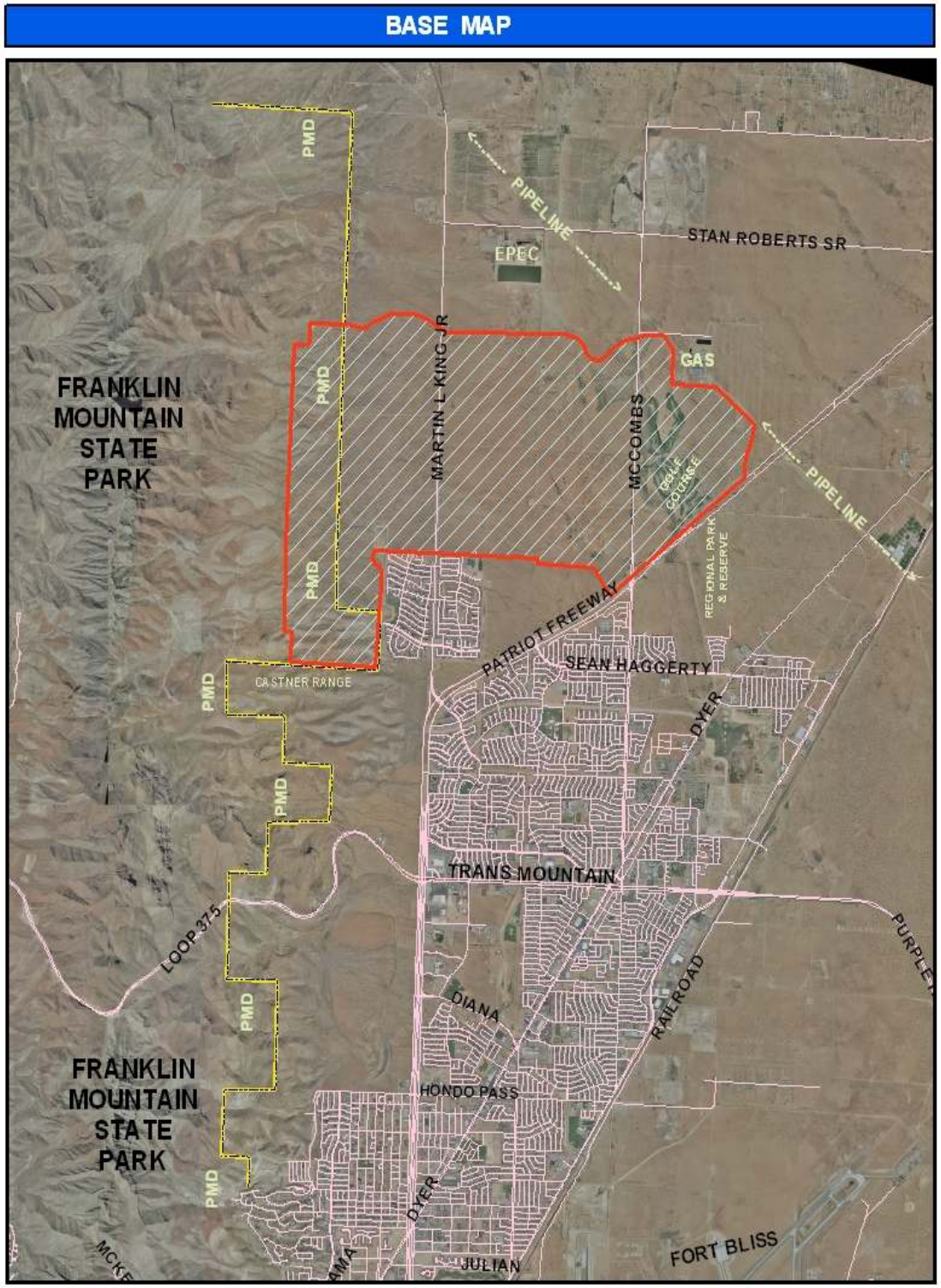
EPWU Property

The EPWU property included in this planning effort is approximately 6600 acres. The site is located near Patriot Freeway (US 54) and consists of portions of the Texas and Pacific Railroad Surveys, Township 1, Block 80, Sections 17, 18, 19 and 20; and Block 81, Sections 13, 14, 18, 19, 20 and 23, El Paso County, Texas.

The property is currently vacant and undeveloped except for the 172 acre golf course which is part of this study.

Adjacent Land Owners

The base map shows current surrounding land owners. To the north of the site the parcel is owned by the EPWU-PSB. To the west are parcels owned by the State of Texas (Franklin Mountain State Park). To the east of the site are parcels owned by EPWU-PSB. To the south the site are parcels is the North Hills Subdivision and parcels owned by Tropicana Homes, Ins and EPT Land Trust. The areas south of the site are currently being developed or planned for development at this time.

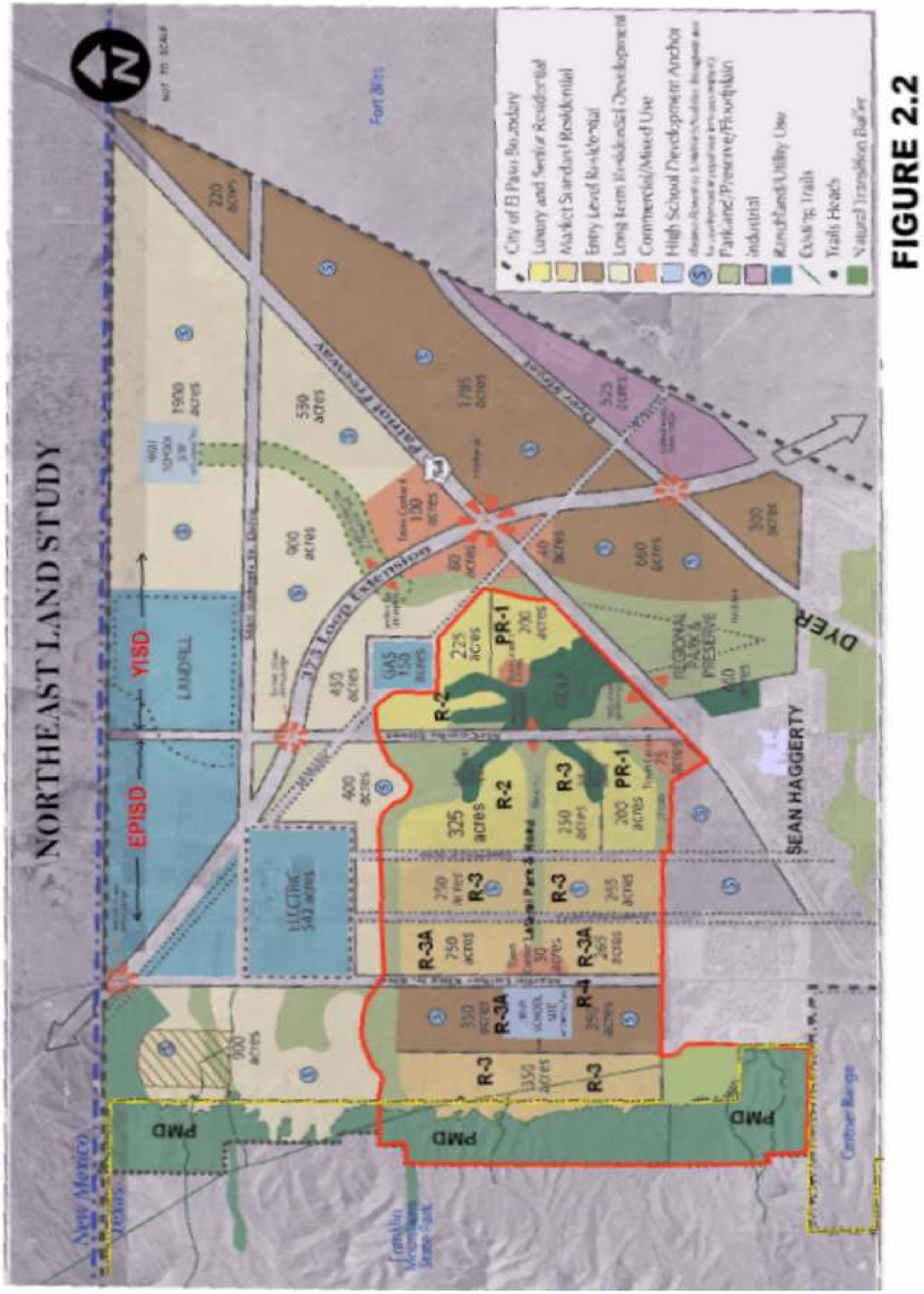


STUDY AREA DESCRIPTION

The western edge of study area abuts the Franklin Mountains State Park which is a preserved mountain area for hiking and primarily passive recreation. Several arroyos cross the property. The property has some areas of moderate slope, primarily in conjunction with the arroyos, and they should not pose significant constraints to development. A portion of study area is located in the Planned Mountain Development District (PMD). The PMD is a zoning ordinance developed to protect and preserve areas near the Franklin Mountains. The rest of the area is currently zoned as Residential and can be developed as such per the El Paso Subdivision Ordinance (Ordinance). Area and site zoning are shown Figure 2.2. The areas in the immediate vicinity of the study area are vacant. To the south lies a residential area; to the east the land use is predominately residential & industrial, to the north is vacant and is used as grazing land for the Bowen Ranch.

Regional Context

The Northeast Study area is located in the Patriot Freeway (US 54) corridor which is the major corridor linking El Paso to New Mexico 40 Patriot Freeway (US 54) brings in traffic from the growing Alamogordo area as well as bringing traffic down from the North. It is located close to the growing Fort Bliss Military Reservation located to the south of subject. Transmountain Road (Loop 375) located to the south of subject and intersects The Patriot Freeway (US 54) also provides a connection from the Study area to the Western part of El Paso. Transmountain Road serves as a loop road since it disperses traffic from the north to the rapidly growing west and large employment centers associated with Ft. Bliss. Residents living on the property can easily access other growing area of the El Paso/Juarez/Las Cruses Metropolitan Area via Patriot Freeway.


NORTHEAST LAND STUDY
EPISD
YISD
LANDFILL
ELECTRIC
Patriot Freeway
375 Loop Extension
DYER
SEAN HAGGERTY
PMD
R-2
R-3
R-3A
R-4
PR-1
City of El Paso Boundary
Luxury and Senior Residential
Market Standard Residential
Entry Level Residential
Long Term Residential Development
Commercial/Mixed Use
High School Development Anchor
Parkland/Preserve/Floodplain
Industrial
Ranchland/Utility Use
Existing Trails
Trails Heads
Natural Transition Buffer
FIGURE 2.2

EXISTING ZONING

The study area is currently zone R-F (Ranch-Farm)and the western portion of the study area & abutting the Franklin Mountain State Park study area is zoned PMD (Planned Mountain Development). The zoning area to the south of the study area is Residential Zoning (R-3, R-3A)

Planned Mountain Development (PMD)

Purpose

The purpose of the Planned Mountain Development District is:

- To protect significant natural features of the mountain development area and preserve the city's unique visual setting as part of the comprehensive plan
- To provide an alternative approach to conventional flat land development by allowing transfer of residential densities through clustering of dwellings in order to preserve larger area of open space
- To minimize scarring and disturbances of the natural character of the mountain development area through control of grading and cut/fill operations
- To control water runoff and soil erosion
- To provide a safe means of ingress and egress for vehicular and pedestrian traffic to and within the mountain development area and the Franklin Mountain State Park.

Open Space Ownership Control

Where required, the common open space shall be owned by an incorporated or unincorporated association to ensure that it will be permanently maintained in its natural state. Open space may be dedicated for public use or transferred in trust to the City pending City Council approval.

Density Permitted
The following table shows that the maximum dwelling units per gross acre shall be calculated based on the percent average slope of the property as follows:

Percent Average Slope	Maximum Density Dwellings per Gross Acre
0 to 5	7.0
5.1 to 10	6.0
10.1 to 15	5.0
15.1 to 20	4.0
20.1 to 25	3.0
25.1 to 30	2.5
30.1 to 35	2.0
35.1 to 40	1.5
40.1 or more	1.0

Dedication of Open Space required and minimum lot areas
In order to retain the significant natural features of the mountain development area, common, public, or private open space, or a combination thereof, shall be provided as part of a proposed development. The minimum amount of open space to be provided is based on the percent average slope of the property as shown in the following table.

Percent Average Slope	Percent of the Average Slope Left Undisturbed
0 to 5	20
5.1 to 10	25
10.1 to 15	30
15.1 to 20	35
20.1 to 25	40
25.1 to 30	45
30.1 to 35	50
35.1 to 40	55
40.1 or more	60

EXISTING AND FUTURE LAND USE

Current land use is shown in Figure 2.3. Land use and zoning are related; however, they are not the same. Zoning ordinances are in place to regulate development, but land use shows what type of facility is located on the particular parcel. An undeveloped area designated as residential will likely not ultimately be developed entirely as residential. Typical large residential areas integrate churches, restaurants, public services, and some level of commercial development.

The study area will be zoned from R-F (Ranch-Farm) to Residential and the land set aside for the Town Centers will be zoned Commercial. The PMD (Planned Mountain Development) zoning will remain unchanged. The area to the south of the study area is mostly residential.

Projected Future Land Use

The City of El Paso's "Plan for El Paso" *(The Plan)* projected land use for the Northeast Planning Area, which encompasses the study area. This projected land use is illustrated in Figure 2.4. The study area is projected to be predominately residential with some mixed use and commercial adjacent to Patriot Freeway (US 54). The study area is projected to be residential with some commercial and open space in the center and eastern portion of the study area. The area to the south of the study area is currently in the planning stages of development. The proposed development referred to as the Sandstone Ranch Estates Subdivision, located to the south of the study area, will be a mix of neighborhood commercial and residential land use.

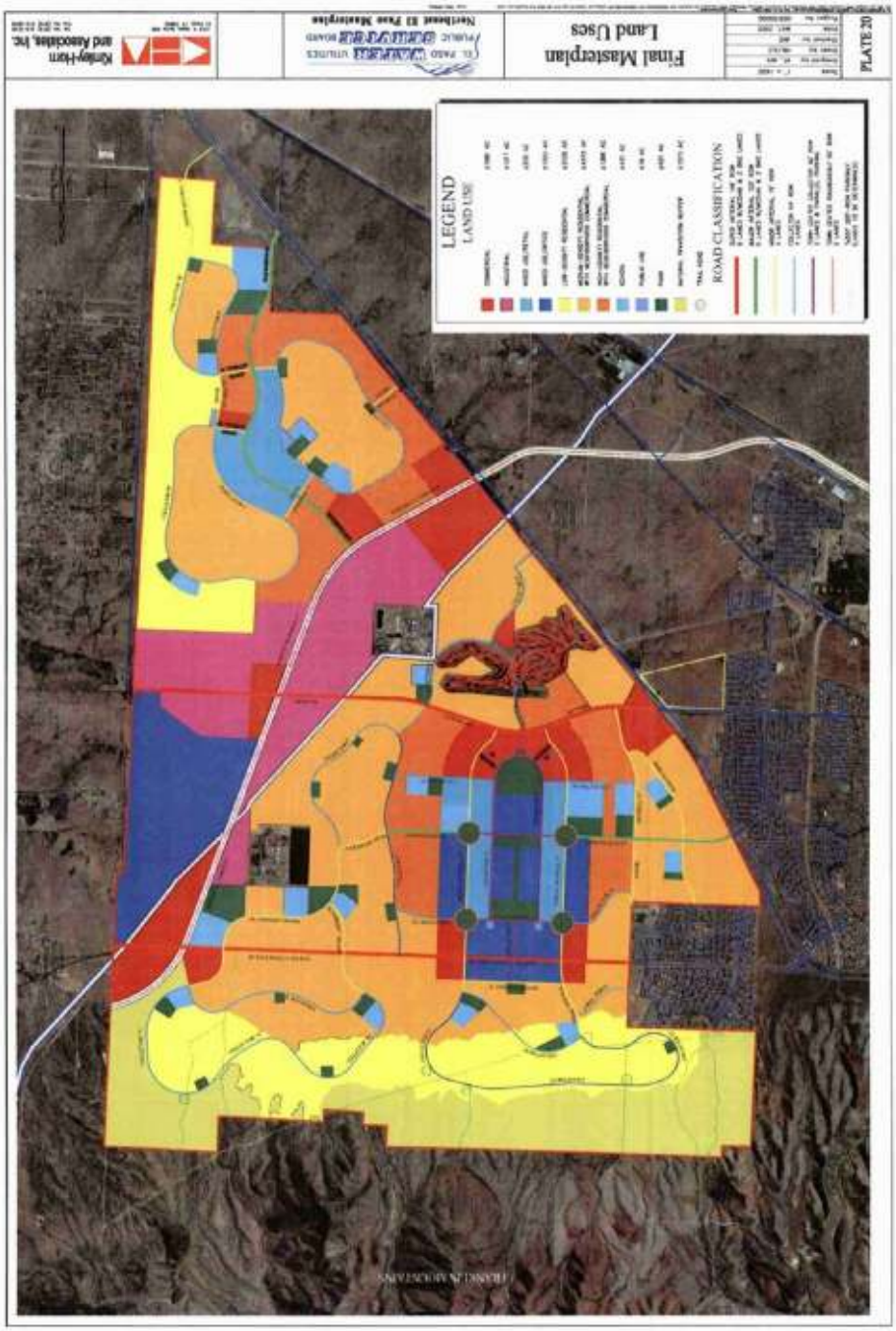

Final Masterplan
Land Uses
PLATE 20
Northeast El Paso Masterplan
Kimley-Horn and Associates, Inc.
LEGEND
LAND USE
ROAD CLASSIFICATION

FIGURE 2.3

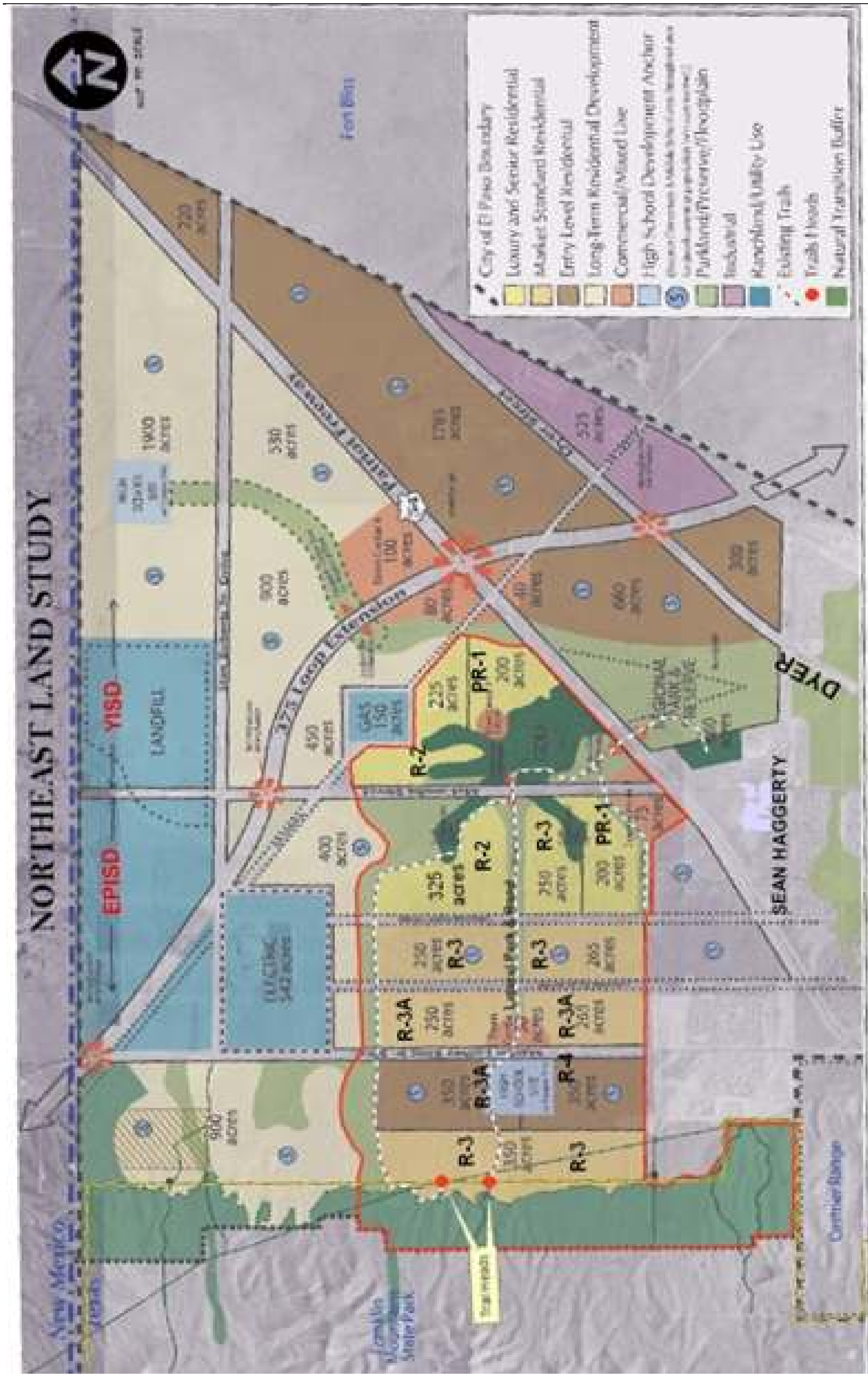

NORTHEAST LAND STUDY
EPISD
YISD
LANDFILL
375 Loop Extension
DYER
SEAN HAGGERTY
R-2
R-3
R-3A
R-4
PR-1
325 acres
City of El Paso Boundary
Luxury and Senior Residential
Market Standard Residential
Entry Level Residential
Long-Term Residential Development
Commercial/Mixed Use
High School Development Anchor
Parkland/Preserve/Floodplain
Industrial
Ranchland/Utility Use
Existing Trails
Trails Heads
Natural Transition Buffer

FIGURE 2.4

PUBLIC SERVICES

The following describes the location and capacity of existing public service facilities adjacent and relative to the planning area – i.e., police, fire, schools, libraries, and parks; public service agency planning criteria and planning considerations; and future plans that the respective public service agencies may have relative to the planning area. Refer to Figure 2.5. Which is a copy of the City of El Paso "Community Facilities" March 1999. Plan for El Paso.

Police Protection

Existing Facilities

The closest El Paso Police Department Command Center is the Northeast Regional Command Center located at 9600 Dyer Street. This location is near the intersection of Dyer Street and Rushing Blvd. approximately 4.5 miles south of the land study area. Police protection services for the project area will be provided from this facility.

Planning Criteria / Consideration

The primary concern of the Police Department is adequate public access into any proposed developments with the project area.

Future Plans

There are plans to construct an additional police facility in the project area on the northern portion of Sean Haggerty Drive in combination with the fire department facility and also in the northern area outside the study area on McCombs Drive. These facilities will be a combination of Police/Fire Station facilities.

Fire Protection

Existing Facilities

The two closest existing fire stations are Station 28 at 10800 McCombs Street and is located approximately ½ mile to the south and Station 30 at 4451 Loma Clara Drive located off Martin Luther King Jr. Drive almost abutting subject planned area.

Planning Criteria / Consideration

According to the Fire Department, to properly serve the community and to meet Insurance Service Office (ISO) standards, any development needs to be within 1.5 miles of a fire station. Meeting the ISO standards helps to reduce the insurance rates for homeowners and businesses. Also, the city prefers to locate its fire stations adjacent to a park and/or a police facility for security reasons.

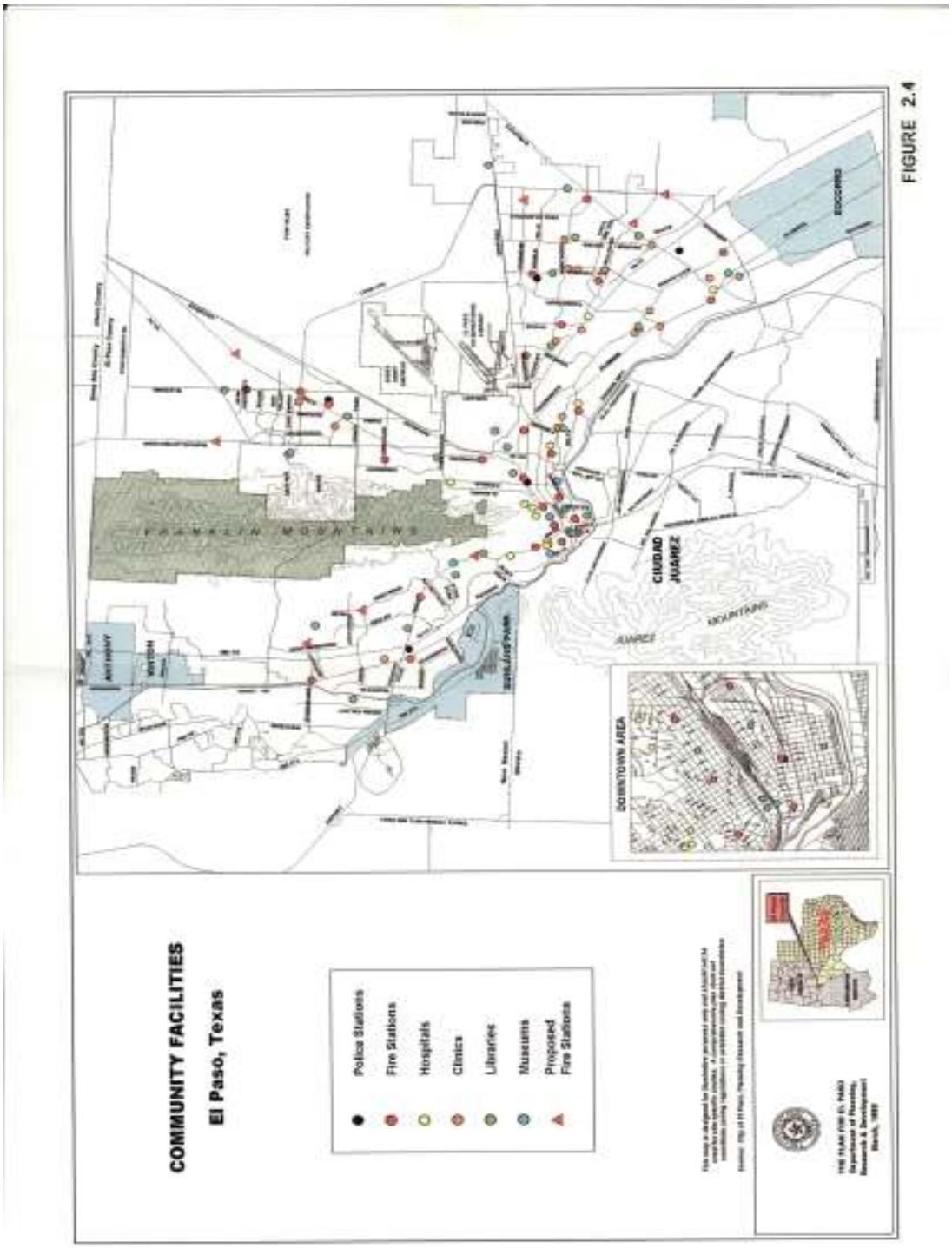

COMMUNITY FACILITIES
El Paso, Texas
Police Stations
Fire Stations
Hospitals
Clinics
Libraries
Museums
Proposed Fire Stations
FRANKLIN MOUNTAINS
CIUDAD JUAREZ
DOWNTOWN AREA
FIGURE 2.4

FIGURE 2.5


Overall Site Characteristics
El Paso Water Utilities
El Paso, Texas
URS

FIGURE 2.6

The Fire Department tries to construct fire stations prior to construction of any development to be able to serve it when it is needed.

Future Plans
A good location of a new fire station is in the vicinity of the northwest corner of the project area on Sean Haggerty Drive and to the northeast outside the study area on McCombs Drive. (See figure 2.6) The fire station requires a minimum of two acres, and four acres if the police station is combined with the fire facility.

El Paso Community College (Transmountain Campus)

Land study area students will attend El Paso Community College on Patriot Freeway (US 54) three and one half (3 ½) miles south of study area. Additional campus within the study area is not planned

Public Schools

The study area is located in the El Paso Independent School District (EPISD) and also in the Ysleta Independent School District (YISD). These districts are divided by McCombs street. EPISD is to the west of McCombs street and YISD is to the east. (Figure 2.7)

Currently, the closest high school in the EPISD district is Andress High School located on Sun Valley Drive two and one half (2 ½) miles south of study area. Nolan Richardson Middle School is adjacent to study area and Doctor Nixon Elementary School is ¼ mile south of study area. Both of these schools are in close proximity to Martin Luther King Jr. Boulevard. There are two elementary schools proposed immediately south of the study area on Marcus Uribe Drive.

In the YISD district, the closest high school is Parkland High School and is located three miles south close to where Dyer Street intersects McCombs Drive. North Star Elementary School is located on Sean Haggerty Drive one mile south of study area.

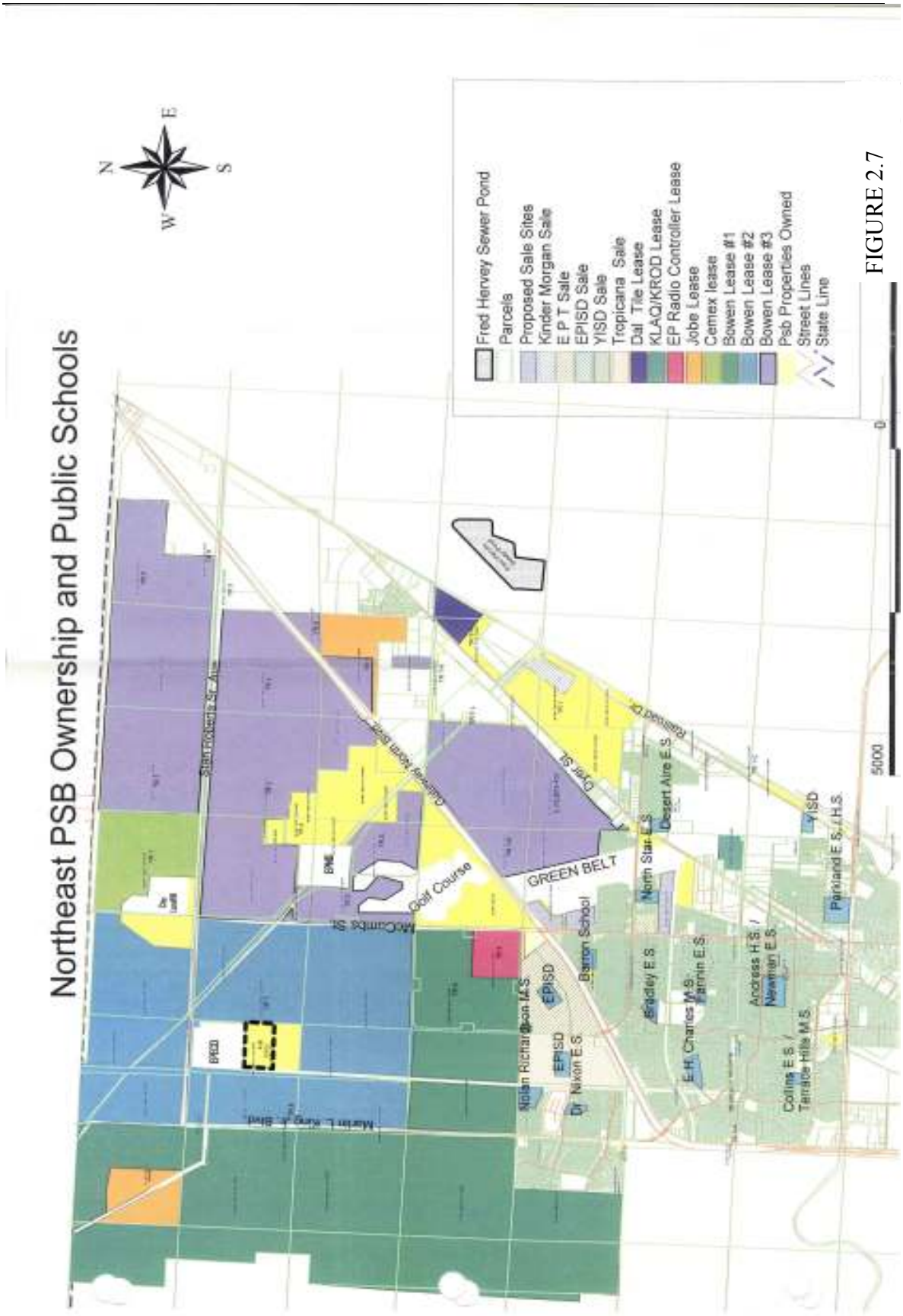

Northeast PSB Ownership and Public Schools
N
E
S
W
Fred Hervey Sewer Pond
Parcels
Proposed Sale Sites
Kinder Morgan Sale
E P T Sale
EPISD Sale
YISD Sale
Tropicana Sale
Dal Tile Lease
KLAQ/KROD Lease
EP Radio Controller Lease
Jobe Lease
Cemex lease
Bowen Lease #1
Bowen Lease #2
Bowen Lease #3
Psb Properties Owned
Street Lines
State Line
0
5000
Golf Course
GREEN BELT
McCombs St.
Dyer St
Desert Aire E.S.
North Star E.S.
Bradley E.S.
Barron School
Nolan Richardson M.S.
Dr. Nixon E.S.
E.H. Charles M.S.
Andress H.S. / Newman E.S.
Collins E.S. / Terrace Hills M.S.
Parkland E.S. / H.S.
YISD
EPISD
PSB

FIGURE 2.7

Planning Criteria / Consideration

With the proposed construction of a high school along Painted Dunes Boulevard which is anticipated, there will not be the need to build any additional high school within the EPISD study area. However, there will be a need to build four to five elementary schools and possibly one or two middle schools in the study area. The YISD will need to build a high school in their district north of study area in the extended future when the study area is fully built out. The area within the YISD is planned for Luxury and Senior living and this area will in all probability not have a need for an elementary school.

The minimum area for an elementary school is four (4) acres, and the ideal area is 10 (ten) acres with one (1) additional acre for each additional 100 students. For a middle school, the area is ten (10) acres minimum, 20 acres ideal and also one (1) acre for each additional 100 students.

Future Plans

There are plans to build the above mentioned high school in the EPISD district along Painted Dunes Boulevard along with its feeder schools.

Libraries

The City's Director of Libraries was contacted to discuss library facilities in the project area. To better serve the residents, a branch library is planned near the intersection of McCombs street and Patriot Freeway (US 54).

Existing Facilities

The nearest library relative to the study area is located at 9600 Dyer Street approximately 4.5 miles south of the study area.

Future Plans

As mentioned their may be an interest in the future in building a branch library in the study area near the intersection of Patriot Freeway (US 54) and McComb street.

Mass Transit

Two Mass Transit Terminals are planned within the study area at the Town Center located at McCombs Drive and Patriot Freeway a (US 54) and the Town Center located at Martin Luther King Jr. Boulevard. The proposed sites will be five (5) acres and will house the bus terminals and a parking facilities. The proposed bus route will travel from the Town Center at McCombs Street and travel north to Painted Dunes Boulevard, then go west to the Town Center on Martin Luther King Jr. Boulevard and then travel south to US54 and beyond.

Parks & Recreation

Existing Facilities

The Parks Department Planning Area of the entire northeast currently has 16 neighborhood parks and 1 mini park, with the 58 acre Northeast Regional Park under construction immediately south of the subject study area. The current level service is approximately ½ acre for every 1,000 residents. Parks are generally well located and adequately sized. The close proximity of the Franklin Mountains serves as a spectacular backdrop for parks in the area. (See Figure 2.8)

Park Name and Size

Wellington Chew	4430 Maxwell Ave.	3.00 acres
Dolphin	5900 Marlin Dr.	4.00 acres
Logan	5500 Byron Dr.	2.28 acres
Shearman	5820 Tiger Eye Dr.	4.00 acres
Sunrise	3800 Sunrise Ave.	8.00 acres
Arlington	10350 Arlington Dr.	7.84 acres
Colonia Verde	5452 Katchikan St.	2.06 acres
Franklin	6050 Quail Ave.	10.00 acres
Milagro	5310 Annette Ave.	2.78 acres
Mountain View	8400 Diana Dr.	5.95 acres
Student Memorial	9425 Vicksburg Dr.	2.29 acres
Todd Ware	4600 Stahala Dr.	7.50 acres
Sue Young	9730 Diana Dr.	7.00 acres
Nolan Richardson	4400 Maxwell Ave.	6.50 acres
Desert Downs	8805 Railroad Dr.	3.50 acres
Skyline Youth	5050 Yvette Ave	40.00 acre +/-
Franklin	6050 Quail Ave.	10.00 acres

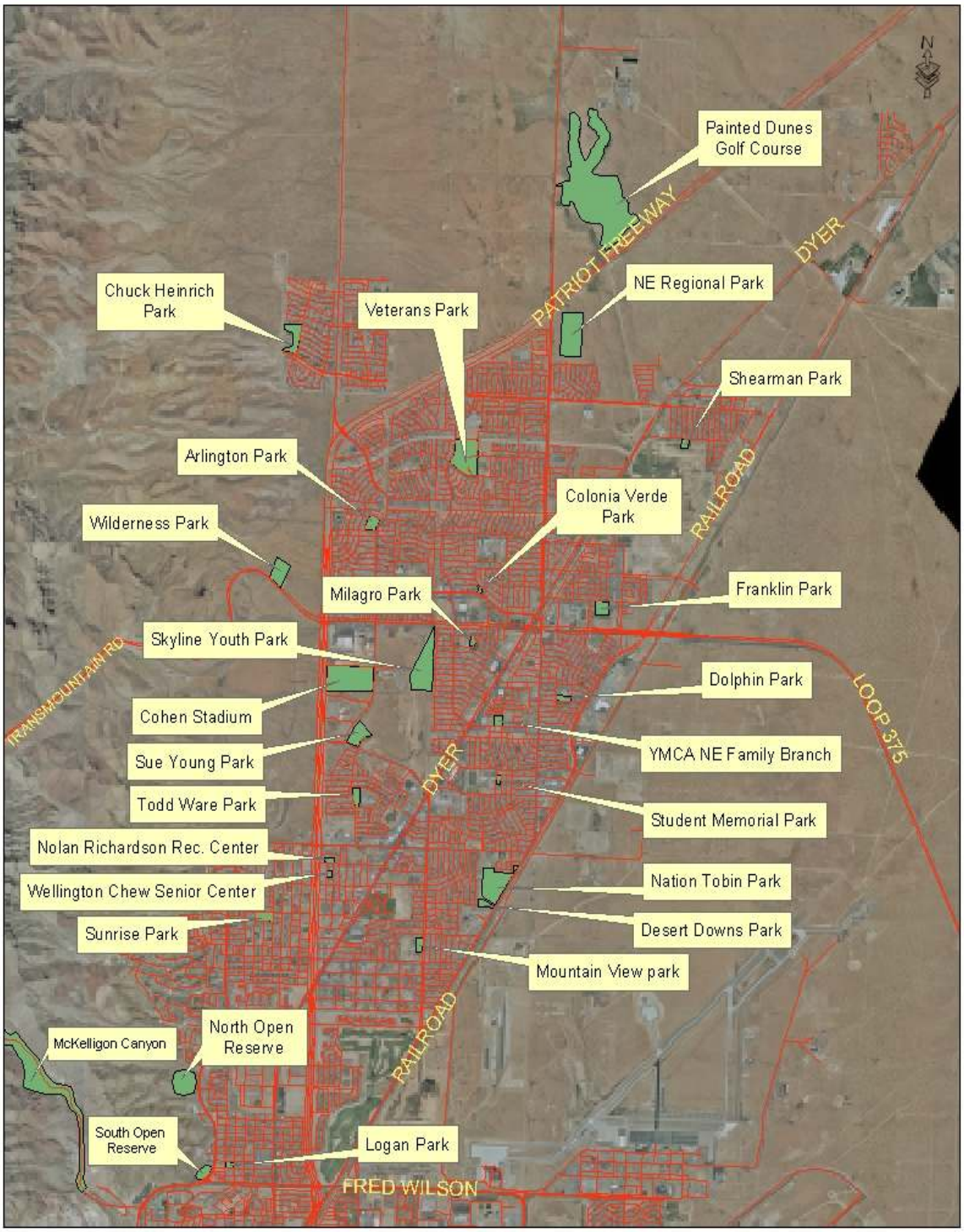
Regional Parks

Northeast Regional – SE of McCombs & US 54 – 58 acres (Under Construction) – ¼ mile south of subject area.

Veterans Park – 5380 Salem Dr. – 60 acre +/- 11/2 mile south of subject area.

Nations Tobin – 8831 Railroad Dr. – 70 acres +/- 4 miles south of subject area.

NORTHEAST PARK ZONES



EL PASO WATER UTILITIES

FIGURE 2.8

NORTHEAST LAND STUDY AREA

Future Recommendations from Parks Department

1. Expansion of the Northeast Regional Park - add floodplain lands (Green Belt) to the park for ball fields, trails and other amenities that can be built in flood prone areas.

2. Future Regional Park located just outside subject area to the north along McCombs Drive.

Proposed Lateral Park Located along Painted Dunes Blvd.

The Subject Land Study proposes to have a lateral park along Painted Dunes Boulevard with a drainage channel running in the middle of this area. The lateral park will extend from McCombs Drive to Martin Luther King Jr. Drive which is approximately two (2.0) miles in length (See Figure 2.7). This lateral park will continue as a trial system to the Franklin Mountain State Park to the west and to the east, the trail system will proceed under McCombs Drive and on to the south under the Patriot Freeway to the open area which is the Green Belt which is adjacent to the Northeast regional park.

Franklin Mountain State Park

The Texas Parks and Wildlife Department manages the Franklin Mountains State Park, a 37 square mile park. The western property line of the project area abuts the eastern boundary of the park. The primary consideration that the TPWD's personnel expressed are a buffer between the development on the project area and the park; the amount of open space within the project area; and access to the system of trails of the park. The access points might be from two to three acres is size with small parks and parking areas. Interested groups would like to have open spaces that are specialty areas that can be used to access the Franklin Mountains State Park for biking, jogging, and other outdoor activities.

The PSB sold approximately 6,850-acres to the Franklin Mountain State Park in June of 1989. Approximately 3,960 acres of this land are located in Northeast El Paso in the vicinity of the land study area. The State Park is the largest urban park in the nation and over a quarter of the Park's current acreage was acquired from the PSB. In this regard, the PSB has made a sizable contribution to maintaining open space in El Paso.

LAND USE PLAN

The proposed land use plan is shown in Figure 3.1. The plan contains a mix of land uses that blends open space, natural arroyos, buffers, access to the Franklin Mountain State Park, and other community amenities. Taken together, these amenities are designed to create a desirable quality-of-life for all future residents. A large band of open space in and around the Planned Mountain Development District (PMD) on the Western Boundary study area is maintained. (Figure 3.1 shows the land use plan with the PMD boundary.) A network of natural arroyos feeds into the open space throughout the study area.

The following table provides a breakdown of potential development of the property.

Table 3.1 – Development Summary

Land Use Plan	Development Characteristics
Number of Dwelling Units	14,810 Dwelling Units
Square Footage of Commercial Development (Retail, Office & Apartments)	5,662,800 square feet or 130 acres
Acreage of Parks/Open Space	1,980 Acres
Residential Acres	3,580 Acres
Average Dwelling Units/Developable Acre	4.12 Units/Acre
Painted Dunes Golf Course	172 Acres

In addition to these land uses, the study area will be served by an extensive trail network that links community facilities such as parks and schools back into the neighborhood. There are three types of trails proposed for the study area; multi-use, developed/bike trails, and undeveloped hiking/biking trails. A unique feature of the trail system is the location of two trail heads located on the Westside of study area. These trail heads provide direct access to the Franklin Mountain State Park.

The rest of this section describes the proposed land use plan in more detail.

PROPOSED LAND USES

Residential Land Use

The land use plan contains five residential land uses that establish single- family and multi-family at varying densities.

Luxury - Low Density Residential (R-2)
The Low Density Residential Land Use (LD) is characterized by 3.0 dwelling units/acre. There are approximately 800 acres of LD residential land use within the land study area. LD lands are located in the eastern portion of the land around Painted Dunes Golf Course. A total of 2400 dwelling units with the land use designation of LD are planned for the study area.

Market - Medium Density Residential (R-3)
The Medium High Density (MD) land is planned at 3.5 dwelling units/acre. The majority of the MD land is located in the central part of the study area. MD land consists of 1,115 acres and comprises 5,442 dwelling units.

Entry Level -Medium High Density (R-3A & R4)
The Medium High Density (MHD) land provides for slightly higher densities for single-family homes at 5.5 dwelling units/acre. MHD land is located on the western portion of the land study area fronting Martin Luther King Jr. Boulevard. A total of 4,537 dwelling units are estimated for the MHD acres. The MHD land essentially functions as a transition zone between highest density residential and office development and the lower density residential development. MHD land consist of 825 acres.

Senior Residential (PR-1)
The senior residential (PR-1) land is a mixture of garden type homes, detached single family homes and condominium units located adjacent to the Painted Dunes Golf Course. The number of units for this area will vary, but a conservative estimate is 1,600 units. The PR-1 land will consist of 400 acres.

Commercial Land Use

There are two primary commercial land uses located within the study area. They are approximately 130 acres of commercial land in the land study area located at two nodes. The primary node is located on McCombs Drive and Patriot freeway (US 54) at the entrance to the planning area. A smaller node is located on Martin Luther King Jr. Drive across from the potential high school. Commercial land use is located adjacent to the higher density residential development, with the intent of promoting transit use and pedestrian activity, which is located at McCombs Street and the Patriot Freeway (US54). There is a small 5 acre town center located adjacent to the Painted Dunes Golf course and the senior citizen residential area.

Parks and Open Space

A major feature of the land use plan is the amount of land dedicated to parks and open space. There are over 1,980 acres of open space and parkland within the planned study area. Within the developed areas of the site, additional open space is provided by preserving the flow paths running through the property their in natural state.

Parks

There is a two mile linear park which consist of approximately 99 acres in size which should satisfy a good portion of the parkland requirement. Additionally, one to two acres will be dedicated to the "Trail Heads" at the entrances to the Franklin Mountain State Park. Additional parks will be located so as to serve the distinct neighborhoods that are envisioned to be developed. Park land accounts for approximately 140 acres within the land study area. A schematic rendition of the parks can be seen in the appendix. The size requirements are based on the El Paso Municipal codes; 1 acre per 100 residential units.

Open Space/Natural Arroyos

Open space and associated amenities will be one of the defining features of the land use plan. The majority of the open space is located on the western part of the property, abutting the Franklin Mountains State Park, providing a buffer between the park and development. In addition, the majority of arroyos on the property will be left in their natural state and form important linkages between the development and the open space. A total of 1,830 acres of open space or natural arroyos will be located on the property.

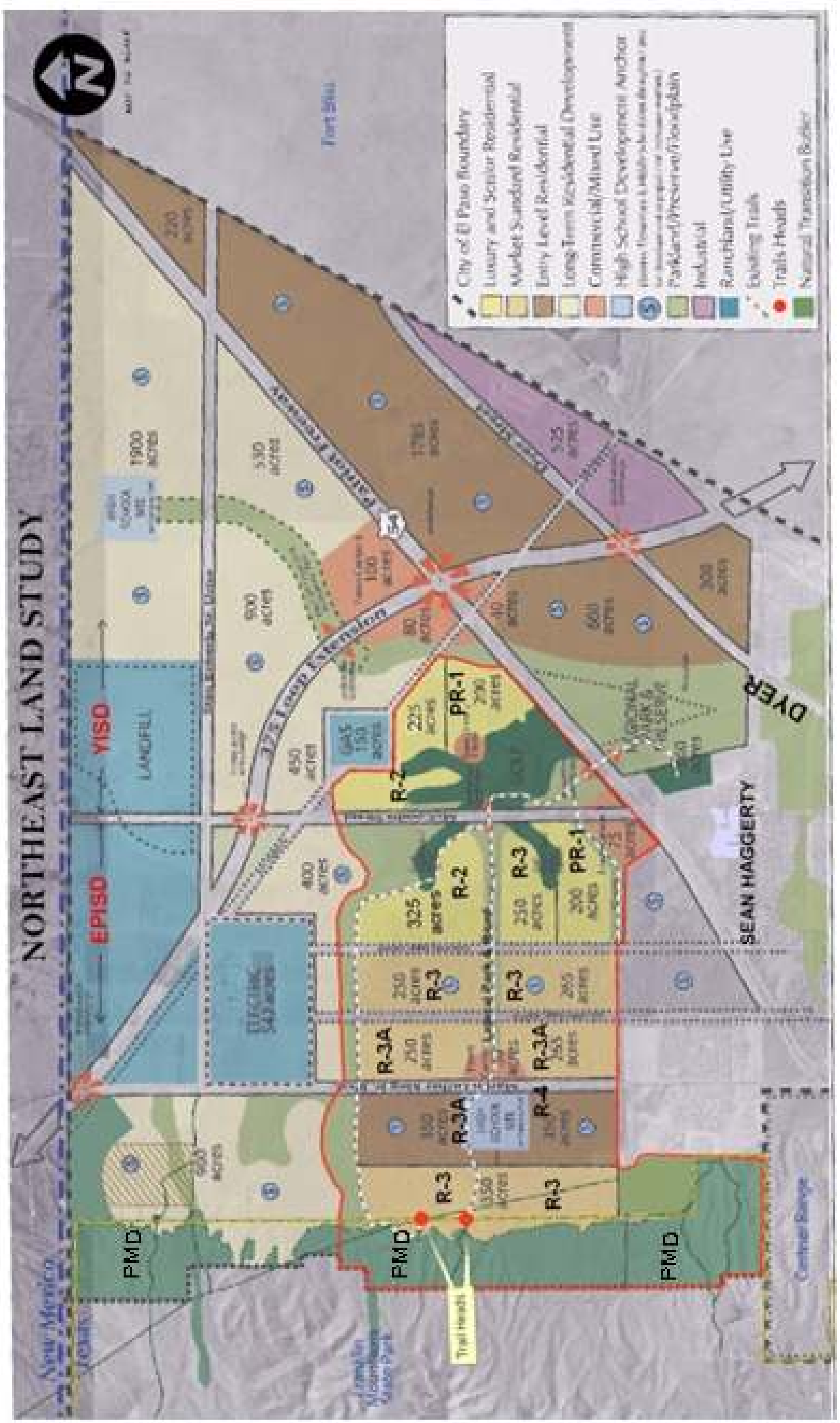

NORTHEAST LAND STUDY
EPISO
YISO
LANDFILL
DYER
SEAN HAGGERTY
PMD
PMD
PMD
R-2
R-2
R-3
R-3
R-3
R-3
R-3
R-3A
R-3A
R-3A
R-4
PR-1
PR-1
325 acres
Trail Heads
City of El Paso Boundary
Luxury and Senior Residential
Market Standard Residential
Entry Level Residential
Long Term Residential Development
Commercial/Mixed Use
High School Development Anchor
Parkland/Preserve/Floodplain
Industrial
Ranchland/Utility Use
Existing Trails
Trails Heads
Natural Transition Buffer

FIGURE 3.1

Trail System
There are two proposed Trails (Figure 3.1):

The three trails are located on the northern, central and the southern parts of the study area, capable of serving both a recreational and transportation purpose.

The first system will start at the Franklin Mountain State Park Trail Head and proceed across the study area through the lateral park, which connects Martin Luther King Jr. Drive to McCombs Drive, proceeding under McCombs Drive south along the edge of Painted Dunes Gold course, going underneath the Patriot Freeway to the Regional Park and Preserve. This trail is approximately four (4.0) miles long.

The second system will start at the other Trail Head and proceed along the northern edge of the open space of the study area. It will proceed across Martin Luther King Jr. Drive to McCombs Drive.

The third trail system will start at the southern Trail Head and proceed along the southern boundary of the study area and join up with the other trails and proceed onto the regional park.

- Multi-use Trail – Trail that can be used for jogging, biking, and/or walking. These trails link commercial and office areas to residential development.
- Developed Hiking/Biking Trail – These types of trails are the most prevalent trail in the development. These trails run along the both sides of the proposed Painted Dunes Boulevard.
- Undeveloped Hiking/Biking Trails – Undeveloped trails are primarily off-road trails that occur along arroyos and in the open space area.
- Trail Heads – There are three developed trail heads located in the PMD zoned areas, adjacent to the open space on the western portion on the subject. These trail heads allow bicyclists and hikers with a staging area to begun their rides or hikes into the open space or Franklin Mountains State Park. These trails heads will have parking areas and other amenities. Roads to the trailhead will be provided by the site developers and included in their development plans.

  Refer to the appendix for the schematic representations of the trail heads and trails.

Painted Dunes Golf Course

Painted Dunes Golf Course is a municipally owned golf course and is being renovated to its original standards. This 172 acre 27-hole course is and will be open to the public.

Painted Dunes Desert Golf Course, designed by architects Ken Dye and Jeffrey Bauer, offers 27-holes of championship style golf. Painted Dunes has received accolades from Golf Digest, Texas Golfer, the United States Golf Association (USGA) and the Dallas Morning News as being one of the preeminent golf facilities in Texas and the Southwest. Undulating greens and rolling hills makes finesse and good aim imperative on the course. This championship layout rewards those individuals who can manage their golf game around the penalties that lay in wait for the careless golfer.

Carved out of the Chihuahua Desert, the East, West and North courses at Painted Dunes sit at the foothills of the Franklin Mountains and the scenic beauty of native foliage and desert wildlife.

Community Facilities

To serve the public service needs of area residents, several community facilities are planned for the property.

Public Schools

The El Paso Independent School District located west of McCombs Drive and Islet Independent School District located west of McCombs drive have indicated that several elementary and middle schools would be needed to serve the anticipated population. In addition, a desire was expressed by several entities for parks and schools to be co-located, which has been reflected in the land use plan. All school sites have also been planned adjacent to the trial network for more efficient and safe pedestrian access. The elementary schools will be located central to the neighborhoods. study area's middle school.

Public Safety Facilities

It has been determined that there is a need for a police station within the land study area, and a need for a fire department substation. A combination of police and fire facility will be located in the northern part of the property on Sean Haggerty Drive.

PROPOSED ZONING

Proposed zoning for the land study area corresponds to existing City of El Paso zoning. The proposed zoning can be seen in Figure 3.2. The proposed zoning will consist of residential, commercial, and Planned Mountain Development District zoning. The following zoning categories are included in the land use plan. Refer to Title 20, Zoning of the City of El Paso Municipal Code for full details on each zoning district.

Table 3-2 – Proposed Zoning

Land Use	Proposed Zoning	District Standards
Luxury	R-2, Single Family Residential District PR-1 (See Senior below)	Minimum Lot Area – 10,000 Sq. Ft; Minimum Lot Width-80 Feet; Minimum Lot Depth-110 Feet;
Market Standard	R-3, Single Family Residential District	Minimum Lot Area – 6,000 Sq. Ft; Minimum Lot Width-60 Feet; Minimum Lot Depth-90 Feet;
Entry Level	R-3A, Single Family Residential District	Minimum Lot Area – 5,000 Sq. Ft. Minimum Lot Width-50 Feet; Minimum Lot Depth-90 Feet;
Entry Level	R-4	Minimum Lot Area – Single Family 6,000 SQ. Ft; Two Family 7,000 Sq. Ft; Minimum Lot Width – Single Family 50 Ft. Two Family 70 Ft. Minimum Lot Depth – Single Family 90 Ft. Two Family 90 Ft.
Senior	PR-1, Planned Residential District 1	Single-Family Dwelling; Two Family Dwelling; Single Family Attached such as townhouses, patios houses and atrium houses; Apartment, including elderly
Town Centers	C-4 Commercial District	Major Shopping Malls, Apartment Complexes and Offices
Planned Mountain District	R-3, and Open Space	See Standards Above


NORTHEAST LAND STUDY
EPISD
YISD
LANDFILL
DYER
SEAN HAGGERTY
R-2
R-3
R-3A
R-4
PR-1
PMD

FIGURE 3.2

Planned Mountain Development District Open Space Compliance

Land use by category within the PMD is summarized in Table 3-3, below. The amount of open space identified in the land use plan significantly exceeds city requirements for open space in the PMD.

Table 3-3-Land Use Allocation within the PMD District

Allocation of Land Use within PMD Type of Development	Acreage
Low Density Residential (R-3)	0.0 Acres
Medium Density Residential	23.0 Acres
Medium High Density Residential	0.0 Acres
Trail Heads	4.0 Acres
Open Space & Arroyo	1123 Acres
TOTAL	1150 Acres

Together with the natural arroyos, open space accounts for 1123 acres or 98% of the land use allocated within the PMD District.

The area set aside in the land use plan as open space or natural arroyos within the PMD is more than the amount required by the current PMD zoning requirements. It is the intent of this land study to leave this area as public open space as a credit for the entire study area. Individual developments within the PMD will not be required to set aside additional open space because the requirement for study area as a whole, have been met and exceeded.

PROJECTED POPULATION

The estimated population for the land study area at full build out is estimated to be 42,641 total persons. This population projection has been derived by multiplying the total units per land use type by a density factor provided by URS: as follows, Senior at 1.8, Luxury at 2.0, Market Standard at 2.8, and Entry/Market Standard at 3.5 per household. The average for renter occupied apartment is 2.20. The following table shows the projected population by land use for the planning area.

Projected Population

Land Use	Dwelling Unit Count	Projected Population
Luxury	2,400 Units	4,800 Persons
Market Standard	5,442 Units	15,237 Persons
Entry Level	4,537 Units	15,880 Persons
Senior	1,600 Units	2,880 Persons
Apartment	1,800 Units	4,719 Persons
Totals	**14,810 Units**	**43,516 Persons**

Water, Sewer, & Reclaimed Water

UTILITY INFRASTRUCTURE

The El Paso Water Utilities – Public Service Board (EPWU-PSB) exists to serve the water resource needs of the population of the El Paso geographical area. Its strategic and operational impetus is on delivering quality water, wastewater, and other services as demanded and as deemed feasible. One purpose of this study is to determine the necessary facilities of water and wastewater systems required to provide service to the Northeast Master Study area.

To size the required facilities it is necessary to project water and wastewater flows resulting from the potential development of the Northeast Master Study. The methodology used to determine the demands and flows are explained detail below.

Infrastructure – Analysis

Conducting detail water and wastewater analysis for each plan was both cost prohibitive and time prohibitive; therefore, a detailed analysis was only conducted for the Northeast Land Study area.

WATER SYSTEM ANALYSIS

Existing Water Distribution System

The EPWU currently operates several wells that are strategically scattered through out the study area. These wells pump water, via low pressure water lines to the Northeast Supply Reservoir. The Northeast Booster Station withdraws water from the Northeast Supply Reservoir and pumps it directly in to the East High Pressure Zone's distribution system and supply's the War Highway/North Hill Supply Reservoir. The North Hill Booster Station, along with the War Road Pump Station conveys water to the War Road Reservoir (1.4 MG capacity). The reservoir is a distribution/equalization reservoir for the War Highway Pressure Zone. The North Hills Subdivision; which is located outside and south of the study area, lies within the War Highway Pressure Zone. Two wells, #33 & #52 also pump into the War Highway Pressure Zone. Table 2 identifies some of the distribution waterlines that serve the North Hills Subdivision.

No other water facilities exist within the Franklin East 1 Pressure Zone, except for a single 12-inch waterline that extends along McCombs Blvd. to the Painted Dunes Golf Course.

TABLE 2: EXISTING WATER DISTRIBUTION SYSTEM-WAR HIGHWAY PZ

No.	STREET	FROM	TO	PIPE MATERIAL	SIZE In	Comments
1	Loma del Norte Dr.	War Road Reservoir	Northern Boundary Line	PVC	16/12	Along the western Boundary
2	Jon Cunningham Blvd.	Loma del Norte Drive	Eastern Boundary Line	PVC	12	Along the southern Boundary
3	Loma Franklin Drive	Jon Cunningham Blvd.	Northern Boundary Line	PVC	8	One block west of the eastern boundary
4	Loma Real Avenue	Martin Luther King Blvd.	Eastern Boundary Line	PVC	12	Connects to 8-inch on Loma Franklin Dr.
5	Southern Boundary Line	War Road/North Hills Pump Station	Martin Luther King Blvd	PVC	16	Connects to Well #52 supply line (16-inch)
6	Martin Luther King Blvd	Well #33	Southern Boundary Line.	AC/CI	12	Connects to Well #52 supply line (16-inch)

Projected Demands

Most of the land that is located within the study area is undeveloped. The Proposed Land Use Plan provided by URS indicates that approximately 6,975 acres will be developed. Approximately 3,580 acres are anticipated as residential development, 130 acres of potential commercial development, 170 acres are anticipated for schools, and 140 acres for parks. Approximately 1,150 acres are located within the Planned Mountain Development Zone (PMD); see Table 3.

TABLE 3: NORTHEAST MASTER PLAN - ACREAGE BY LAND USE

LAND USE	ACRES
Residential	3,580
Commercial	130
Golf Course	170
Open Space	1,616
Public	19
Parks	140
Schools	170
PMD	1,150
Total	6,975

This study calculates the expected water demands associated with the anticipated development patterns of the subject property. It also recommends the facilities required to provide water service to the study area. Residential water demand rates used in this study were those recommended by Parkhill, Smith, and Cooper Engineers' Eastside Zaragoza Service Area Study, a.k.a. Tri-Loop Study, dated August 16, 2002. The demand rates for commercial, schools, etc. were developed in accordance with achieving a 140 gal/cap/day composite demand rate.

The following discussion explains the development of the average and peak day demands used to size the water facilities that are required for the Phases 1-4 (first 10 Years Growth) scenario. Phases 1 - 4 development will encompass approximately 6,975 acres. **Table 3** summarizes the first 10 Years growth acreage per land use.

PHASES 1 – 4 (10 YEAR GROWTH)

Average water demand associated to residential development (luxury, senior, market standard, and entry/market standard density) was calculated by applying a 115-gal/cap/day unit demand rate. An average population density factor of 2.88 people per dwelling is applied for residential development. A 3.0 dwellings per acre rate is applied to luxury density development, 4.0 dwellings per acre is applied to senior density development, 3.5 dwellings per acre is applied to market standard, and 5.5 dwellings per acre for entry/market standard density. This study uses a 1.71 peak factor to determine peak day demand, as recommended in Parkhill, Smith, and Cooper Engineers' Distribution System Modeling Study, dated May 2004. The peak day demand rate calculates to

196.64 gal/cap/day. The total peak day water demand rate due to residential development (3,580 acres) equals to approximately 8.38 MGD (5,823 gpm).

Commercial water demand was calculated by using 2,951 gal/day/acre. A 1.71 peak factor is used to calculate the peak day demand for 130 acres of commercial development. This calculates to approximately 0.66 MGD (458 gpm) demand.

The commercial water demand of 2,951 gal/day/acre is also applied to parks, public, and schools (329 acres-combined) in this study. The combined peak water demand (using a 1.71 peak factor) is calculated at approximately 1.66 MGD (1,153 gpm).

The total expected water demand by the study area for Phase I is approximately 10.7 MGD (7,434 gpm). The existing system is not capable of serving the total peak day demand. Improvements to the water system are necessary to provide water service. The calculated average and peak day composite demand for Phases 1 - 4 of the study area are 140 gal/cap/day, and 239 gal/day/cap, respectively.

Service Elevations/Pressure Zones

The El Paso Water Utilities' 1994 Water Facilities Master Plan indicates that the study area would be served by the extension of the War Highway Pressure Zone. During the analysis it was determined that the previously recommended system was not feasible. An intermediate pressure zone that would encompass a large amount of land with large demands would be necessary. This would mean installing numerous pressure reducing valves on large transmission mains.

Instead, two new pressure zones will be created, Franklin East 1 PZ, and Franklin East 2 PZ. The area located lower than elevation 4,100 feet to US-54 will lay within the Franklin East 1 Pressure Zone. The area located from

elevation 4,300 feet (more or less the Planned Mountain Development boundary) to elevation 4,100 feet will lay within the Franklin East 2 Pressure Zone. The creation of an intermediate pressure zone from elevation 4,200 ft to 4,100 ft will be necessary.

WATER SYSTEM RECOMMENDATIONS

This section describes the proposed water facilities improvements needed beginning at Year 0 (Phase 1, immediately after first land sale), Year 3 (Phase 2), Year 5 (Phase 3), and Year 9 (Phase 4).

PHASES 1 - 4 (10 YEAR GROWTH)

Franklin East 1 Pressure Zone

The construction of the North 2 Reservoir (5 MG); which is scheduled to be conducted in Year 2007, will serve as a distribution/equalization storage reservoir for the East High Pressure Zone and as supply for the North 2 Booster Station. The North 2 Reservoir and the North 2 Booster Station will be constructed north of the existing North Hills Subdivision along Martin Luther King Blvd. The booster station will supply approximately 7.5 MGD to meet the 10 year (Phases 1-4) growth demand. The booster station will pump into the Franklin East 1 Reservoirs #1 & #2 (each with a 2 MG capacity) via 36-inch, and 30-inch waterlines; a 24-inch and a 16-inch water distribution mains are necessary to distribute the water to the study area.

The construction of the Franklin East 1 Reservoirs #1 & #2 and the North 2 Booster Station have been included in the EPWU-PSB 10-Year Capital Improvement Program.

TABLE 8: PHASE 1, RECOMMENDED WATER IMPROVEMENTS – FRANKLIN EAST 1 & 2

No.	Improvement Description	Length (ft)	Capacity	Comments
1	North 2 Reservoir #1,		5 MG	Overflow Elev. 4138 ft
2	North 2 Booster Station,		3.5 MGD firm	
3	Franklin East 1 Reservoir #1,		2 MG	Overflow Elev. 4228 ft
4	Franklin East 1 #1 Booster Station		2.5 MGD firm	
5	Franklin East 2 Reservoir #1		2 MG	Overflow Elev. 4404 ft
6	Furnish & Install 36-inch SCCP	1,300		
7	Furnish & Install 30-inch SCCP	6,700		
8	Furnish & Install 24-inch SCCP	29,500		
9	Furnish & Install 16-inch PVC	34,500		

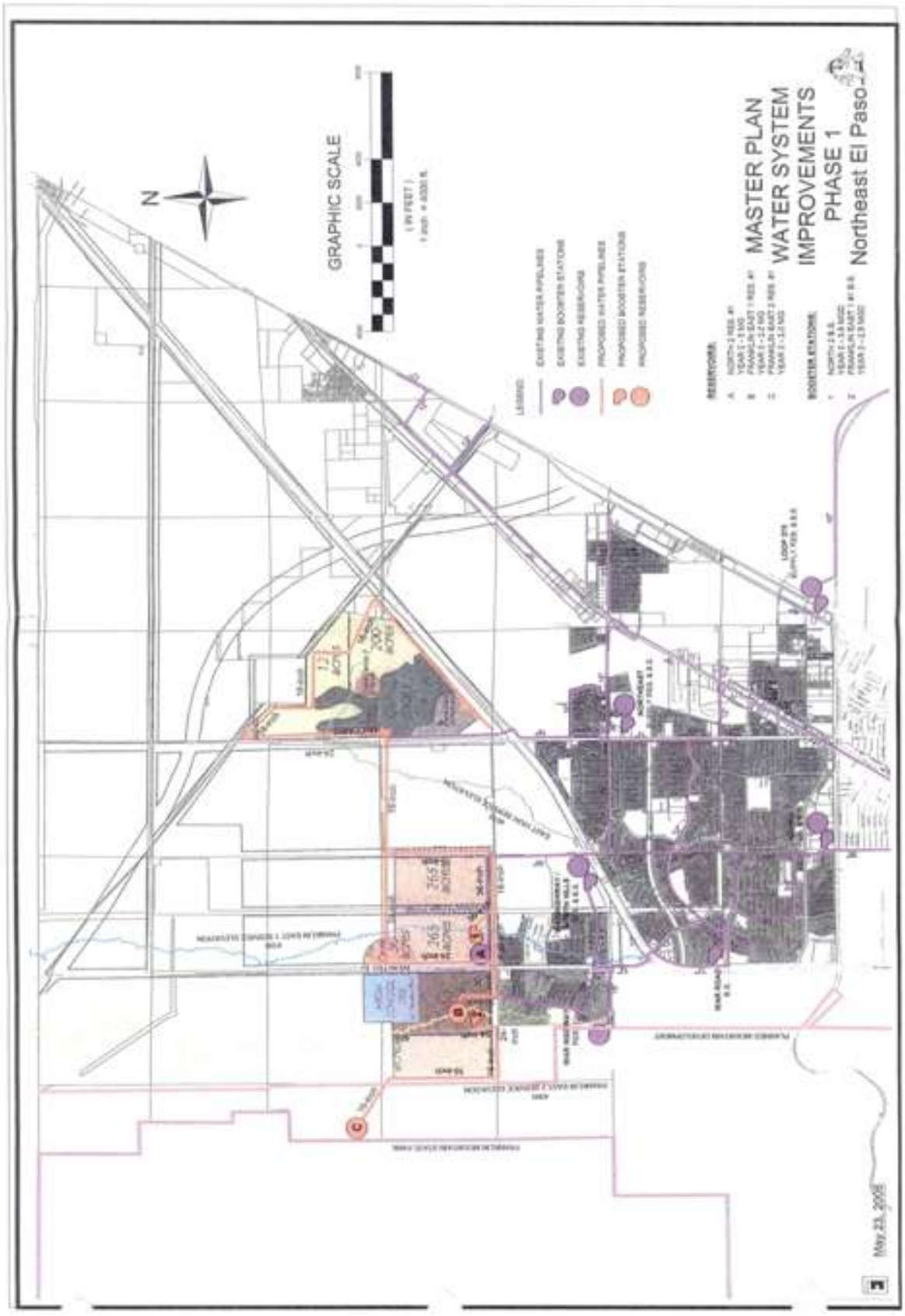

MASTER PLAN
WATER SYSTEM
IMPROVEMENTS
PHASE 1
Northeast El Paso
GRAPHIC SCALE
N
May 23, 2006

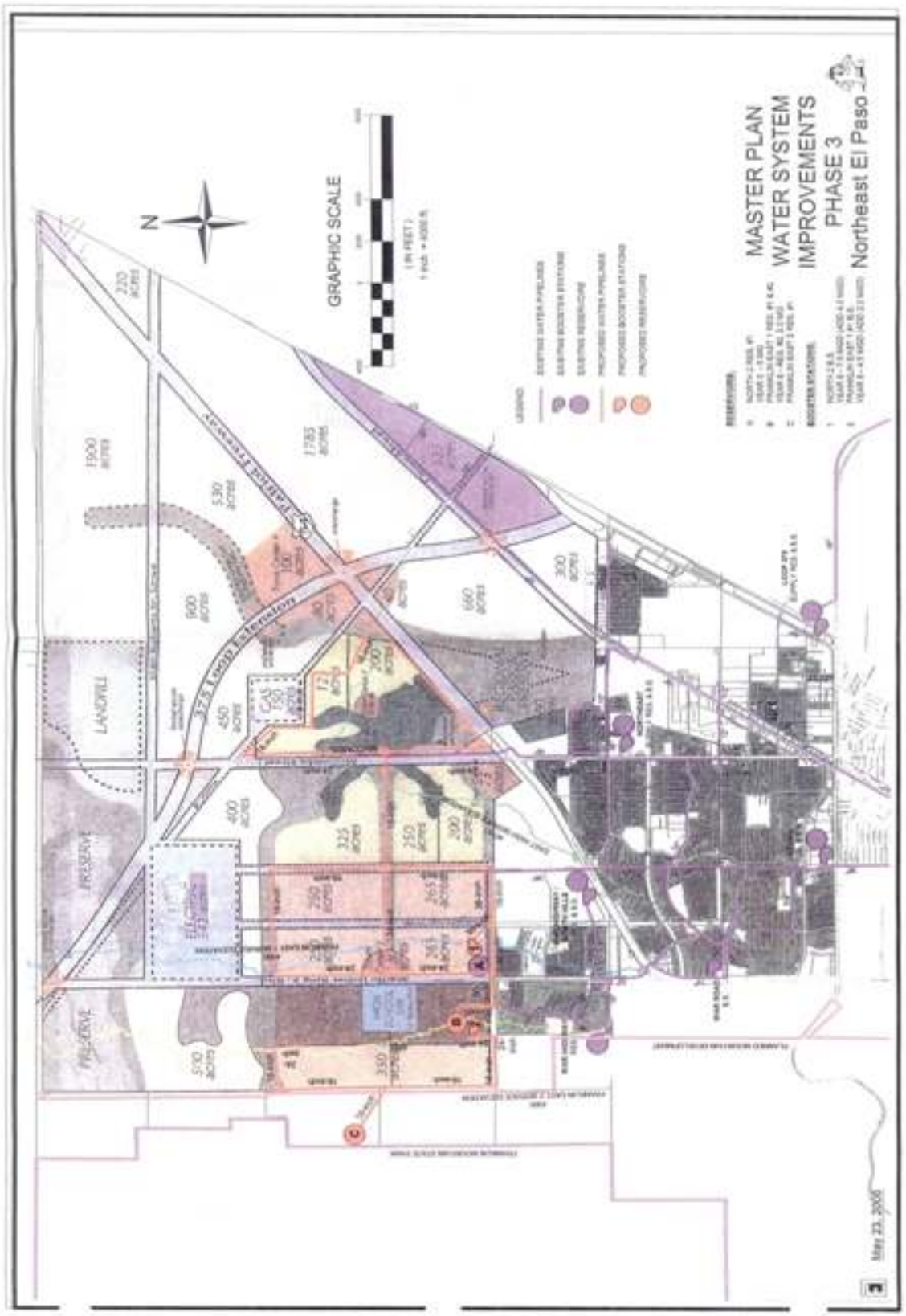
TABLE 9: PHASE 3, RECOMMENDED WATER IMPROVEMENTS – FRANKLIN EAST 1 & 2

No.	Improvement Description	Length (ft)	Capacity	Comments
1	North 2 Booster Station		Add 4 MGD firm	
2	Franklin East 1 #1 Booster Station		Add 2 MGD firm	
3	Franklin East 1 Reservoir #2		2 MG	Overflow Elev 4228 ft.
4	Furnish & Install 24-inch SCCP	11,100		
5	Furnish & Install 16-inch PVC	17,800		

Franklin East 2 Pressure Zone

A western portion of the study area is located within the proposed Franklin East 2 Pressure Zone. This area is located west and northwest of the existing North Hills Subdivision. It is the projection of this report that the development of this area will begin in Year 1. At this time the construction of a Franklin East 1 Booster Station #1 at the Franklin East 1 Reservoirs #1 & #2 site; and a new reservoir (Franklin East 2 Reservoir #1) with an overflow elevation of 4404 ft will be necessary. A waterline to connect the Franklin East 1 Booster Station #1 to Franklin East 2 Reservoir #1 will also be required. The booster station will begin with a firm pumping capacity of 2.5 MGD in Phase 1 but will be upgraded to 4.5 MGD in Phase 3. Franklin East 2 Reservoir #1 will have a 2 MG storage capacity and will be located within the PMD zone near the state park boundary line. This reservoir will serve development located between elevations 4300 ft to 4100 ft. An intermediate pressure zone will be created between elevations 4200 ft to 4100 ft. Several pressure reducing valves will be required along contour elevation 4200 ft.

The construction of the Franklin East 1 Booster Station #1 and the Franklin East 2 Reservoir #1 have been included in the EPWU-PSB 10-Year Capital Improvement Program.


MASTER PLAN
WATER SYSTEM
IMPROVEMENTS
PHASE 3
Northeast El Paso
GRAPHIC SCALE
N
375 Loop Extension
LANDFILL
PRESERVE
PRESERVE
May 23, 2006

WASTEWATER SYSTEM ANALYSIS

Existing Wastewater Collection System

There is no existing wastewater service in the area; however, the El Paso Water Utilities-Public Service Board currently provides wastewater collection service to the area located outside and south of the study area, mainly the North Hills Subdivision. The wastewater service is provided via the following facilities.

The North Hills Subdivision's wastewater is collected by a 15-inch interceptor and a 12-inch collector. The wastewater is conveyed into a 15-inch interceptor that is located on McCombs Blvd. and is eventually discharged into the Grouse Lift Station.

The North Hills Subdivision is divided along Martin Luther King Blvd. into two tributary areas. The west tributary area is served by a 12-inch collector that extends in a north/south direction along Martin Luther King Blvd. from Marcus Uribe Drive to US-54. Along its path the 12-inch collector main connects to several 8-inch wastewater mains that discharge into the 12-inch wastewater main.

The eastern half of the North Hills Subdivision is served by a 15-inch interceptor that extends in a north/south direction along an easement adjacent to an El Paso Electric Company easement.

A 12-inch collector that begins at Loma Del Rey Drive and extends south along Loma De Color Drive (approx. 2,300 ft) to Loma Grande Drive, collects wastewater from several 8-inch mains. At the intersection of Loma Grande Drive and Loma De Color the collector enlarges to a 15-inch interceptor and continues south for approximately 1,200 ft, along an easement that is located adjacent to the El Paso Electric Company easement to a 200 ft drainage easement. An 8-inch wastewater main connects to the interceptor at Jon Cunningham Drive. The drainage easement extends in a northeasterly direction, adjacent and parallel to the Patriot Freeway (US54).

The 12-inch collector and the 15-inch interceptor cross US-54 at Martin Luther King Blvd. and Sean Haggerty Avenue, respectively. Following different routes the two wastewater mains meet at the Rushing/Sweetwater intersection. A 12-inch wastewater main on Sweetwater Drive conveys the wastewater to the 15-inch interceptor on McCombs.

The 15-inch interceptor extends south to Dyer. The main continues south along Dyer to Fairbanks Avenue. The wastewater is transferred to a 21-inch interceptor at the Fairbanks/Dyer intersection. The 21-inch wastewater main continues south along Dyer to Woodrow Bean Trans Mountain Drive. The interceptor follows Trans Mountain Drive east to McCombs, approximately 750 ft. The interceptor turns north along McCombs to Pheasant Street. The 21-inch

wastewater interceptor continues north to Deer Street. At this intersection (Pheasant Street and Deer Street) the interceptor splits into two (2) 21-inch interceptors. One main continues north along Pheasant to Sun Valley Drive. The other wastewater line extends east along Deer to Railroad Drive.

The interceptor that is located on Pheasant Street and continues north to Sun Valley enlarges to a 24-inch interceptor at the Pheasant/Sun Valley intersection. This main extends in an easterly direction for approximately 900 ft. At this point the interceptor makes a left turn (north) through undeveloped land, through a 50' El Paso Electric easement to a 50' drainage easement. The interceptor enlarges to 30-inch, makes a right turn (east) and extends along the drainage easement to the Grouse Lift Station.
As mentioned in the above paragraphs, the 21-inch interceptor that extends along Pheasant Street from McCombs to Deer Street splits into two (2) 21-inch interceptors. One interceptor continues north along Pheasant Street to Sun Valley Drive and the other extends in an easterly direction along Deer Street.

The 21-inch interceptor that extends along Deer Street connects to another 21-inch interceptor within the Southern Pacific Railroad right of way; adjacent to the eastern El Paso City Limits. The two 21-inch interceptors discharge into a 24-inch interceptor that discharges into the Grouse Lift Station. The Grouse Lift Station's firm pumping capacity is 27 MGD. Currently only 14 MGD is conveyed by the lift station to the treatment plant during a peak 2-hour period. Therefore, the lift station has excess capacity.

TABLE 12: EXISTING WASTEWATER SYSTEM

No.	STREET	FROM	TO	FACILITY	LENGTH ft	SIZE in	CAPACITY gpm
1	Martin Luther King Blvd.	Marcus Uribe Drive	Patriot Freeway	Gravity Main	2,000	12	750
2	Loma De Color Drive	Loma Del Rey Drive	Loma Grande Drive	Gravity Main	2,300	12	1,228
3	Easement, adjacent to EPEC easement	Loma Grande Drive	200 ft drainage easement	Gravity Main	1,200	15	1,164
4	200 ft drainage easement	EPEC easement	Sean Haggerty Blvd.	Gravity Main	3,100	15	3,504
5	Sweetwater Drive	Rushing Blvd.	McCombs Blvd.	Gravity Main	3,750	12	1,134
6	McCombs Blvd.	Sweetwater Drive	Dyer Street	Gravity Main	8,900	15	1,107
7	Dyer Street	McCombs Blvd.	Fairbanks Avenue	Gravity Main	700	15	1,534
8	Dyer Street	Fairbanks Avenue	Trans Mountain Dr.	Gravity Main	450	21	3,900
9	Trans	Dyer Street	McCombs Blvd.	Gravity	750	21	3,410

	Mountain Drive			Main			
10	McCombs Blvd.	Trans Mountain Drive	Pheasant Street	Gravity Main	270	21	3,410
11	Pheasant Street	McCombs Blvd.	Deer Street	Gravity Main	2,800	21	2,430
12	Pheasant Street	Deer Street	Sun Valley Drive	Gravity Main	1,500	21	2,845
13	Sun Valley Drive	Pheasant Street	900 ft east of Pheasant Street	Gravity Main	900	24	3,211
14	Easement	Sun Valley Drive	100 ft drainage/EPE Easement	Gravity Main	1,450	24	3,211
15	100 ft drainage/EPE Easement	Easement	Grouse Lift Station	Gravity Main	5,700	30	5,821

TABLE 13: EXISTING WASTEWATER SYSTEM

No.	STREET	FROM	TO	FACILITY	LENGTH ft	SIZE in	CAPACITY gpm
1	Deer Street	Pheasant Street	Southern Pacific Railroad ROW	Gravity Main	5,750	21	2,268
2	Southern Pacific Railroad ROW	Deer Street	150 ft northeast of Deer Street	Gravity Main	150	21	2,268
3	Southern Pacific Railroad ROW	150 ft northeast of Deer Street	Grouse Lift Station	Gravity Main	2,800	24	3,240

TABLE 14: EXISTING WASTEWATER SYSTEM

No.	STREET	FROM	TO	FACILITY	LENGTH ft	SIZE in	CAPACITY gpm
1	Southern Pacific Railroad ROW	Grouse Lift Station	Southern Pacific Railroad ROW	Gravity Main	5,750	21	2,268
2	Southern Pacific Railroad ROW	Deer Street	150 ft northeast of Deer Street	Gravity Main	150	21	2,268
3	Southern Pacific Railroad ROW	150 ft northeast of Deer Street	Grouse Lift Station	Gravity Main	2,800	24	3,240

Projected Flows

This study predicts the expected wastewater produced by the study area except the land located within the PMD zone; no development is assumed to occur in the PMD zone. It also recommends the facilities required to provide wastewater collection service to the study area. El Paso Water Utilities' standard average flow rates were used to determine wastewater flow associated to residential, commercial, and industrial development. EPWU standard flow rates are as follows: residential 70 gal/cap/day, and commercial 2,861 gal/ac/day.

The following paragraphs explain the development of the average and peak day wastewater flows used to size the wastewater facilities that are required for the Phases 1 - 4 (first 10 Years Growth) scenario. Phases 1 - 4 development will encompass approximately 6,975 acres. Table 3 summarizes the acreage per land use.

The wastewater collected from the study area is expected to be treated at the Fred Hervey Water Reclamation Plant. This plant has the capability of treating an additional 13 MGD of wastewater.

PHASES 1 – 4 (10 YEAR GROWTH)

The average average wastewater flow associated to residential development (luxury, senior, market standard, and entry/market standard density) was calculated by applying a 70 gal/cap/day unit flow rate as indicated in the El Paso Water Utilities (EPWU) Design Standards. An average population density factor of 2.88 people per dwelling is applied for residential development. A 3.0 dwellings per acre rate is applied to luxury density development, 4.0 dwellings per acre is applied to senior density development, 3.5 dwellings per acre is applied to market standard, and 5.5 dwellings per acre for entry/market standard density. This study uses a 2.12 peak factor to determine peak day flow for all development. The peak factor was calculated using the $PF = 5/(P^{0.2})$ formula; where P = Population in thousands, as found in EPWU's design standards. The peak factor was calculated by considering the entire area's projected population as a whole.

The total peak day wastewater flow rate due to residential development (3,280) acres equates to approximately 6.35 MGD (4,410 gpm). Commercial, public, and schools wastewater flow were calculated by using 2,861 gal/day/acre. This study uses a 2.12 peak factor to determine peak day wastewater flows. The peak factor was also calculated based on EPWU design standards. Total wastewater flows associated to 130 acres of commercial development equals to approximately 0.37 MGD (258 gpm).

Phase I of the Northeast Master Plan does not expect any industrial development.

The total expected wastewater flow for Phases 1 - 4 is approximately 7.14 MGD (4,957 gpm). The existing system is not capable of serving the total peak day flow. Improvements to the wastewater system are necessary to provide wastewater collection and treatment service.

The calculated average daily composite wastewater flow for the study area is 78.7 gal/cap/day.

Wastewater System Recommendations

In sizing the interceptors, lift stations and force mains to serve the study area through build-out, the peak flows for each segment of each line were computed on the land uses, populations, and flow factors developed above. Once peak flows were established for each sewer segment, the size and slope of the segment was determined in accordance with EPWU design standards.

Typically, sizing of the wastewater interceptor facilities to serve a study area is dependant on all factors mentioned in the previous paragraph as well as serving the anticipated ultimate development of the geographic drainage basins in the study area. This section describes the proposed wastewater facilities improvements needed beginning at Year 0 (Phase 1, immediately after first land sale), Year 3 (Phase 2), Year 5 (Phase 3), and Year 9 (Phase 4). As previously stated, the Grouse Lift Station has excess capacity. This report recommends maximizing the lift station before other lift stations are constructed. Also this report uses the same nomenclature and watershed identification as used by CSA's Northeast El Paso Wastewater Facility Master Plan, 1994.

Phase 1

Interceptor System IV

Interceptor system IV consists of two interceptors, Interceptor IVA, and IVB that convey wastewater produced by the study area to the Grouse Lift Station.

Interceptor System IVA

Interceptor IVA extends northwest from the Grouse Lift Station to the study area. The interceptor consists of 7,000 ft of 33-inch, 800 ft of 30-inch, 4,100 ft of 27-inch, and 22, 8000 ft of 24-inch diameter sewer interceptor. The wastewater interceptor follows and alignment generally described by the following:

a. In a northerly direction, as a 33-inch diameter through undeveloped land located within Section 32, Block 80, TSP 1 to Tiger Eye Street.
b. Westerly along Tiger Eye across Dyer Street, as a 33-inch diameter.
c. Northwesterly as a 24-inch diameter pipeline through the Greenbelt Levee to Sean Haggerty Blvd.
d. Westerly along Sean Haggerty, as a 24-inch diameter pipeline to McCombs Blvd.
e. Northerly along McCombs Blvd. as a 24-inch to Colin Powel Avenue.
f. Westerly along Colin Powell Ave. as a 24-inch to and across US-54.
g. In a northerly direction as a 24-inch diameter pipeline through the study area for approximately 11,000 ft.
h. Northerly through the study area as an 18-inch diameter pipeline for approximately 3,350 ft.

The existing Grouse Lift Station currently has a design capacity of 27 MGD. The station is currently pumping approximately 14 MGD during a peak 2-hour flow period. After review of the development trends within the Northeast El Paso area, it appears that the 13 MGD excess capacity at the Grouse Lift Station is capable of handling the wastewater flows generated from the anticipated development of the study area. The wastewater flow was calculated based on the criteria and assumptions discussed and mentioned in the previous sections of this report. In Year 5, Interceptor IVA will carry an average flow of 744 gpm (1.1 MGD) with a maximum day flow of 1,607 gpm (2.3 MGD). By Year 10, Interceptor IVA will carry an average flow of 1,464 gpm (2.1 MGD) with a maximum day flow of 3,148 gpm (4.5 MGD).

Interceptor System IVB

Interceptor IVB extends northwest from the Grouse Lift Station to the study area. The interceptor consists of 8,300 ft of 18-inch, and 2,500 ft of 15-inch diameter sewer interceptor. The wastewater interceptor follows an alignment generally described by the following:

a. A 18-inch pipeline will extend in a northwesterly direction toward US-54 for approximately 7,800 ft.
b. A 18-inch pipeline will cross under US-54.

c Starting north of US-54 a 24-inch pipeline will extend in a northerly direction for approximately 500 ft.

d. The 18-inch pipeline will connect to a 15-inch pipeline that will extend in a northwesterly direction for approximately 2,500 ft.

Interceptor System III

Interceptor III will discharge into Interceptor IVB at the intersection of US-54 and McCombs Blvd. The interceptor will consist of an 18-inch diameter pipeline. This interceptor is generally described as follows:

a. Starting at a connection point to Interceptor IVB near the intersection of US-54 and McCombs Blvd as a 18-inch diameter pipeline, in a northeasterly direction for approximately 6,700 ft.

b. Continuing as a 12-inch diameter pipeline in a northwesterly direction, through the Painted Dunes Golf Course.

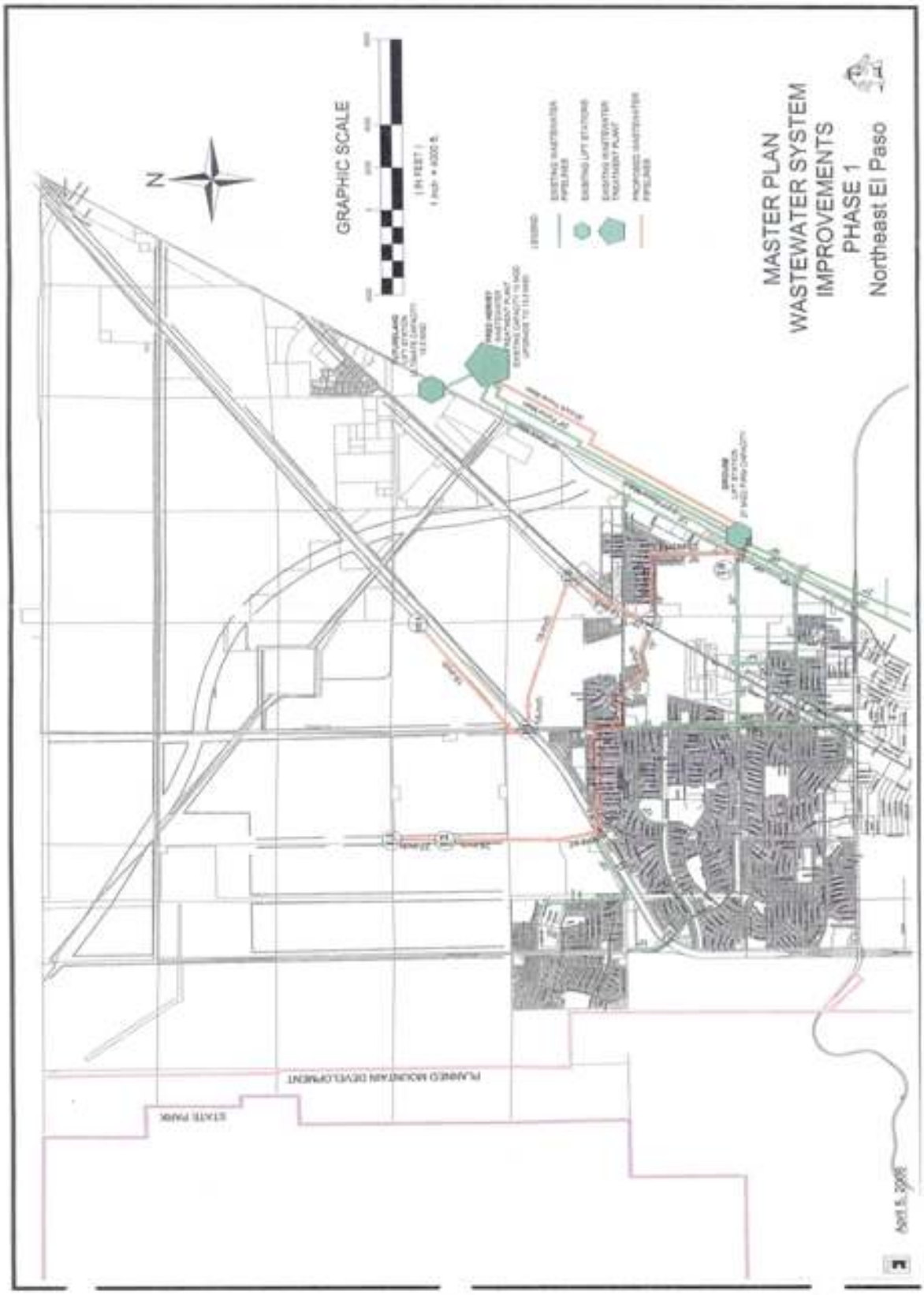
The study area is predicted by this study to develop within 10-years. The projected population for Phases 1-4-10 Year Growth is 42,641. Therefore, the wastewater infrastructure necessary to serve the study area for the planning period should be of similar intensity. However, the infrastructure proposed in this study is based on the build-out population of the study area plus the land located north of the study area; which will develop in the future. The reason for proposing the infrastructure at build-out levels is simply because the facilities must be extended as development occurs, and it will be prohibitively expensive in the future to reconstruct the lines for additional capacity after the study area develops.

TABLE 15: PHASE 1, RECOMMENDED WASTEWATER IMPROVEMENTS

No.	Improvement Description	Length (ft)	Capacity	Comments
1	Furnish & Install 33-inch	7,000		
2	Furnish & Install 30-inch	800		
3	Furnish & Install 27-inch	4,100		
4	Furnish & Install 24-inch	22,800		
5	Furnish & Install 18-inch	15,000		

Phase 2

Wastewater system improvement required in Phase 1 have the capacity to service all flow produced by Phase 2. No improvements are required in Phase 2.


MASTER PLAN
WASTEWATER SYSTEM
IMPROVEMENTS
PHASE 1
Northeast El Paso
GRAPHIC SCALE
N
STATE PARK
PLANNED MOUNTAIN DEVELOPMENT

Phase 3

Interceptor System IVB

Service to the area located within Phase 3 of the development is serviced by Interceptor IVB. Interceptor IV B extends northwest from the Grouse Lift Station to the study area. The interceptor consists of 8,300 ft of 18-inch, and 2,500 ft of 15-inch diameter sewer interceptor. The wastewater interceptor follows an alignment generally described by the following:

a. An 18-inch pipeline will extend in a northeasterly direction along Dyer Street for approximately 3,500 ft.

b. The 18-inch diameter pipeline will change direction toward the northwest heading toward US-54 for approximately 7,800 ft.

c. A 18-inch pipeline will cross under US-54.

d. Starting north of US-54 a 24-inch pipeline will extend in a northerly direction for approximately 500 ft.

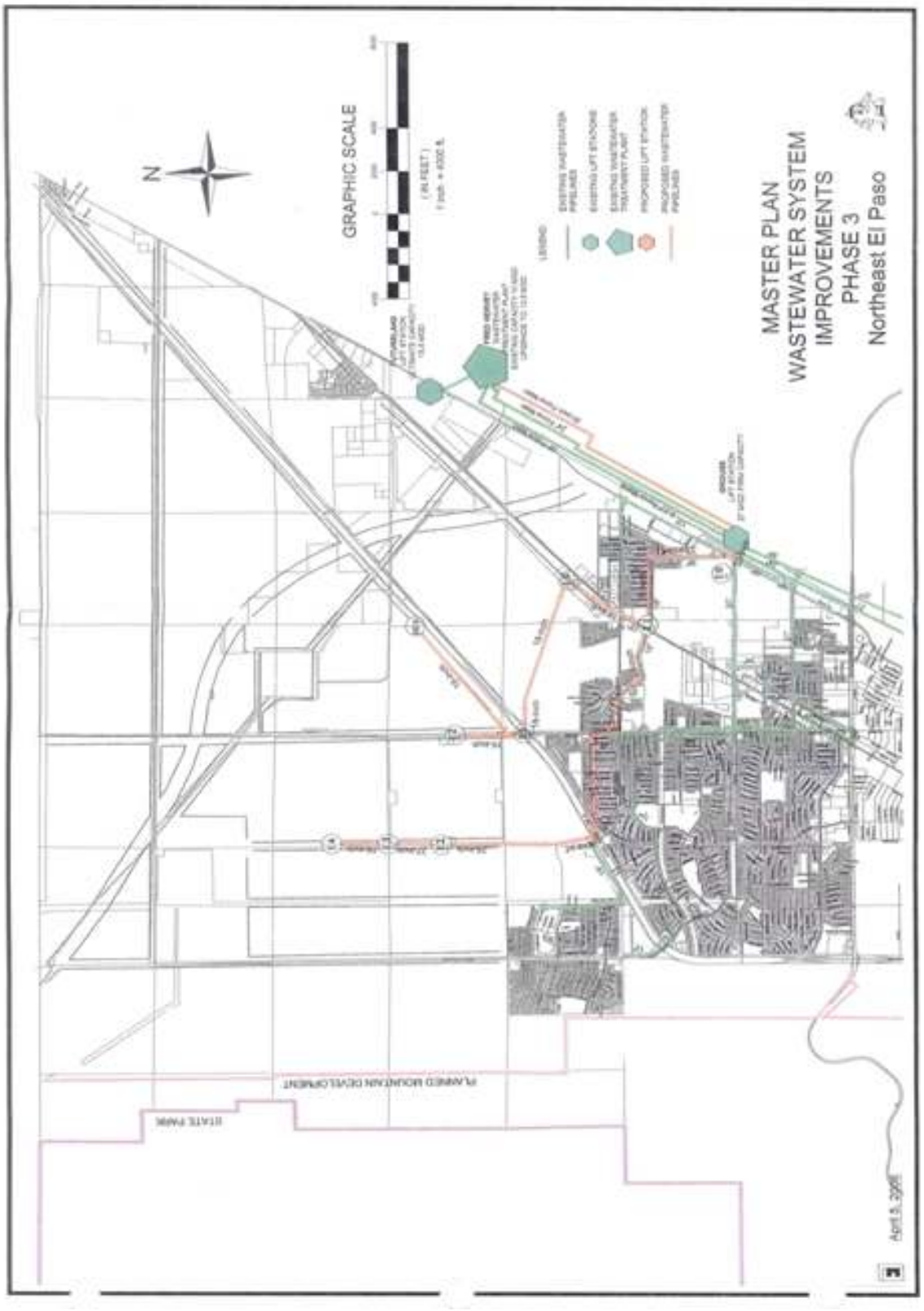
e. The 18-inch pipeline will connect to a 15-inch pipeline that will extend in a northwesterly direction for approximately 2,500 ft.

TABLE 16: PHASE 3, RECOMMENDED WASTEWATER IMPROVEMENTS

No.	Improvement Description	Length (ft)	Capacity	Comments
1	Furnish & Install 18-inch	3,500		
2	Furnish & Install 15-inch	2,500		

Phase 4

Wastewater system improvement required in Phase 3 have the capacity to service all flow produced by Phase 4. No improvements are required in Phase 4.


MASTER PLAN
WASTEWATER SYSTEM
IMPROVEMENTS
PHASE 3
Northeast El Paso
GRAPHIC SCALE
N

PHASING AND IMPLEMENTATION PLAN

This section corresponds to Item C3 under 19.08.040, Land Study Required of the City of El Paso Municipal Code.

PHASING PLAN

Full build-out for the Northeast Land Study is estimated to range from 5 to 10 years. For build-out to occur within this time period, an estimated dwelling unit absorption of 1,200 to 1,500 dwelling units per year must take place. To adequately plan for build-out of the property, the following phasing plan has been developed. Ultimately, development of any kind on the property depends on several factors including:

- Development and completion of Painted Dunes Boulevard through the area.
- The establishment of major water and sewer facilities.
- The development of drainage facilities.

Development of the property is expected to occur from the property surrounding Painted Dunes Golf Course and also land located along Martin Luther King Jr. Boulevard.

These phases are shown and described in greater detail below.

Phase 1 (2007-2010)

Approximately 1,140 residential acres will be developed in Phase 1. Phase I includes three single family residential uses and one commercial use; 200 acres of LD (Senior), 225 acres of LD (Luxury), 665 of MHD (Entry Level). The co-located elementary and middle school sites are also located in Phase 1. The development's initial commercial/rental village development is also scheduled for Phase I, located on the Westside of the property. Approximately 50 acres of commercial are scheduled for Phase 1. The initial apartment and office development will be developed along within the town center. Phase I contains part of the lateral park, drainage channel and roadway. In addition, initial phases of McCombs Drive will be developed to a four land divided roadway system. This phase consist of 1,226 acres which includes the additional improvements.

Phase 2 (2011-2012)

Approximately 940 will be developed in Phase 2. Phase 2 includes two single family residential uses; 100 acres of LD (Senior) and 840 of MD (Market Standard). Two elementary school sites are also located in Phase 2. Phase 1 contains part of the lateral park, drainage channel and roadway. Phase 2 continues the pattern of west to east development of the lateral park, channel and roadway. This phase consists of approximately 986 acres, which includes the additional improvements and the residential development south of Painted Dune Boulevard.

Phase 3 (2013-2015)

Approximately 835 will be developed in Phase 3. Phase 3 includes three single family residential uses; 200 acres of LD (Luxury), 300 of MHD (Entry Level) and 275 of MD (Market Standard). The 50 acre high school/park combination located on Painted Dunes Boulevard and one elementary school site located in Phase 2 north of Painted Dunes Boulevard and west of McCombs Drive. Phase 3 continues part of the lateral park, drainage channel and roadway to McCombs Drive. This phase consists of approximately 1,075 acres, of which represents residential development south of Painted Dune Boulevard and also the proposed high school and the Painted Dunes Boulevard development.

Phase 4 (2016-2017)

Approximately 750 will be developed in Phase 4. Phase 4 includes three single family residential uses; 125 acres of LD (Luxury), 350 of MHD (Entry Level) and 275 of MD (Market Standard). One elementary school site are is also located in Phase 4. This phase consists of approximately 750 acres.

Phasing Schedule		
Years 1-3		
E1:	Senior ……..…..……	200 acres
E2:	Luxury ……..……	225 acres
W2:	Entry/Market Standard …….	375 acres
W3:	Entry/Market Standard …….	265 acres
W6:	Commercial/Rental Village ……..	75 acres
	Subtotal =	**1,140 acres**
Years 4-5		
W1:	Market Standard …….……	300 acres
W4:	Market Standard ……..……	190 acres
W5a:	Senior/Market Standard ……	200 acres
W5b:	Market Standard ……..…	250 acres
	Subtotal =	**940 acres**
	Years 1-5 Total =	**2,080 acres**
Years 6-8		
W7a:	Luxury ……..…	200 acres
W8a:	Market Standard ……..…	125 acres
W9a:	Entry/Market Standard ……	125 acres
W10a:	Entry/Market Standard ……...	175 acres
W11a:	Market Standard ……..…	150 acres
	Subtotal =	**835 acres**
Years 9-10		
W7b:	Luxury ……..……	125 acres
W8b:	Market Standard ……..……	125 acres
W9b:	Entry/Market Standard …….	125 acres
W10b:	Entry/Market Standard …….	225 acres
W11b:	Market Standard ……..…	150 acres
	Subtotal =	**750 acres**
	Years 6-10 Total =	**1,585 acres**
	GRAND TOTAL =	**3,580 acres**

PROJECTED POPULATION

The estimated population for the land study area at full build out is estimated to be 42,641 total persons. This population projection has been derived by multiplying the total units per land use type by a density factor provided by URS: as follows, Senior at 1.8, Luxury at 2.0, Market Standard at 2.8, and Entry/Market Standard at 3.5 per household. The average for renter occupied apartment is 2.20. The following table shows the projected population by land use for the planning area.

Projected Population

Land Use	Dwelling Unit Count	Projected Population
Luxury	2,400 Units	4,800 Persons
Market Standard	5,442 Units	15,237 Persons
Entry Level	4,537 Units	15,880 Persons
Senior	1,600 Units	2,880 Persons
Apartment	1,800 Units	4,719 Persons
Totals	**14,810 Units**	**43,516 Persons**

OPEN SPACE AND ARROYOS

The open space and natural arroyos to the west of the phasing area will retain in public ownership to insure the preservation of these areas and to facilitate the integration of natural hike/bike trails and access locations into the state park. It is anticipated that the EPWU will retain ownership of all of the open space or transfer to the Franklin Mountains State Park or place a conservation easement through a non-profit land conservation organization. The natural arroyos will be transferred to city ownership or will be used for storm drainage or hike and bike trails. These areas are shown on Figure 5.2.

ISSUES AFFECTING PHASING/IMPLEMENTATION

The most significant issues affecting implementation of this phasing plan revolve around four primary issues:

- Construction of Painted Dunes Boulevard
- Construction of water Booster Pump Stations in respective pressure zones
- Construction of drainage facilities to coincide with development
- Transfer of Land for specific uses

Each of these is discussed in more detail as follows:

Construction of Painted Dunes Boulevard

The construction on Painted Dunes Boulevard serves as the minor arterial access into this entire development area. It is essential that its completion be expedited in the early phases of development. While it is possible for Phase 1 and Phase 2 to be developed prior to the completion of Painted Dunes Boulevard, it is recommended that the completion of this roadway be given the highest priority. From this standpoint alone, it may be most desirable for one developer to have control over all of the area indicated by Phases 1 to 4. This would best allow for coordination of this roadway with Tx DOT, as this minor arterial.

Completion of this roadway also sets in place a major drainage structure. It will be constructed along the Painted Dunes Boulevard with a lateral park all running adjacent to each other (See Figure 5.2) that will provide the transition between natural arroyos upstream and the development of hybrid channels downstream.

Construction of Water Booster Pump Stations

Much of the area east of McCombs Drive is not currently serviced by the PSB because of its elevation in relation to existing water service booster pump stations. Three new booster pump stations and reservoirs will be required to serve all of the area represented by this land study. However, the EPWU has already scheduled implementation of these facilities in their CIP program and will bring adequate facilities on line as individual phases are sold and released for development.

Construction of Drainage Facilities

The phasing plan indicated is also largely influenced by existing and planned drainage facilities that will be required as development occurs in this area. To minimize coordination issues between adjacent developers, and to facilitate development of drainage channels, roadways, and hike/bike trail systems, the phasing plan generally corresponds with existing drainage basins and flow paths within the proposed development. Issues of responsibility, cost-sharing, and timing of required facilities in each of these phasing areas can be minimized by paralleling development with existing drainage basins. The phasing plan indicated also provides for the development to start downstream and move upstream to insure that adequate drainage facilities are in place to convey storm water to downstream properties.

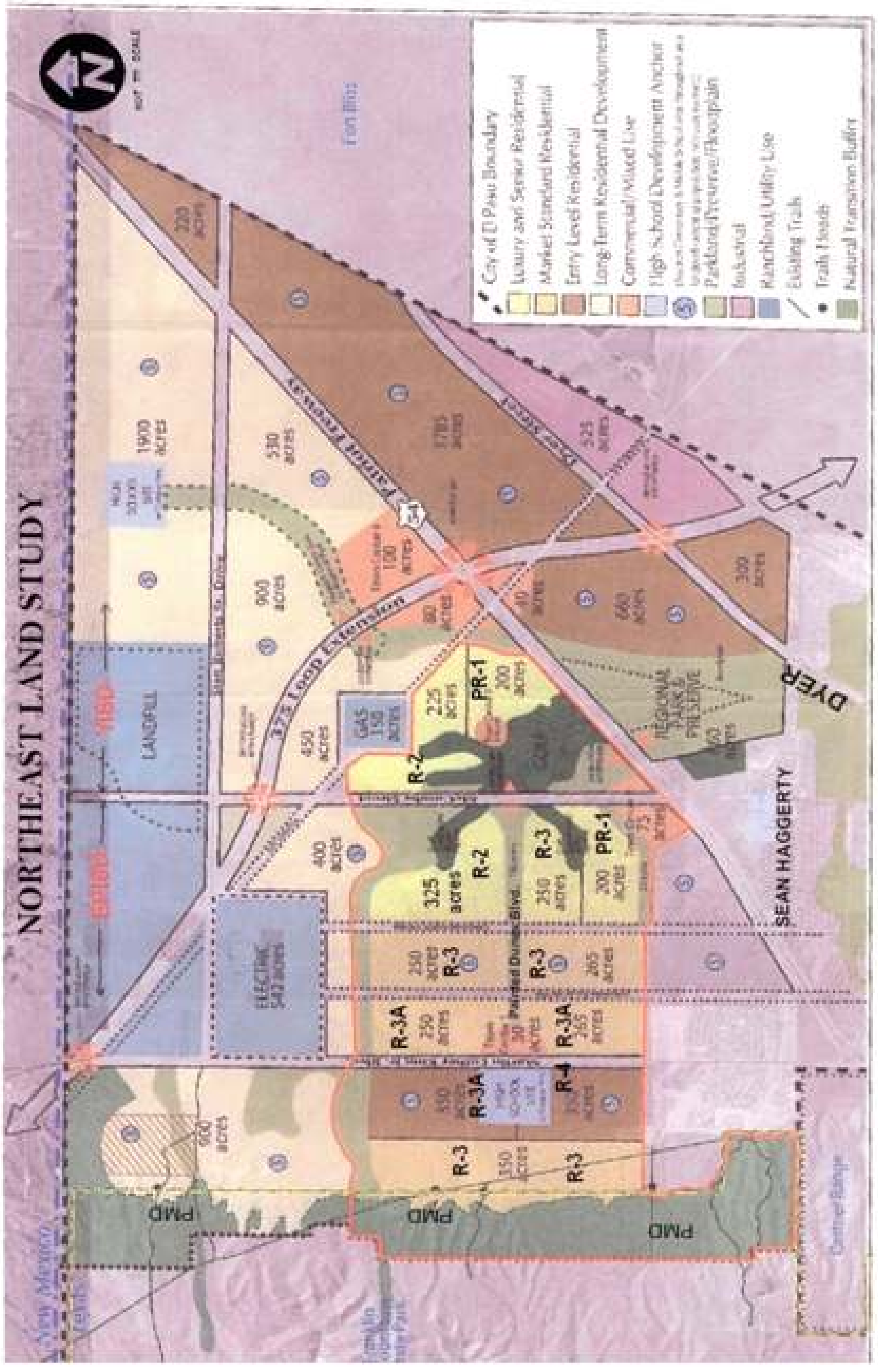

NORTHEAST LAND STUDY
LANDFILL
375 Loop Extension
Patriot Freeway
Painted Dunes Blvd
REGIONAL PARK & PRESERVE
DYER
SEAN HAGGERTY
PMD
R-2
R-3
R-3A
R-4
PR-1
325 acres
City of El Paso Boundary
Luxury and Senior Residential
Market Standard Residential
Entry Level Residential
Long-Term Residential Development
Commercial/Mixed Use
High School Development Anchor
Parkland/Preserve/Floodplain
Industrial
Ranchland/Utility Use
Existing Trails
Trails Heads
Natural Transition Buffer

FIGURE 5.1

Transfer of Land for Specific Uses

One of the primary reasons for the EPWU obtaining approval of this Land Study prior to the sale of land to the development community is to insure that adequate coordination and attention is given to providing for public uses within the developed areas. A great deal of emphasis has been places on providing adequate park space, preserving natural arroyos, implementing coordinated hike/bike trail systems, developing school sites, integrating development to provide access to the State Park, planning major roadways and infrastructure requirements, and addressing numerous other public issues which development impacts. The actual mechanisms and best approach to accomplishing these land transfers for specific uses is beyond the scope of this Land Study, and will continue to be refined as the property is developed.

Project Implementation

One of the significant advantages to Master planning such large areas of land is to address early enough in the development process the roles and responsibilities of various entities involved in implementing the plan. That has been one of the goals of this entire process – to coordinate with numerous public and private stakeholder groups on a plan for implantation of future improvements.

Principle groups that will continue to have significant roles and responsibilities over the life of this development project include:

- Public Service Board
- City of El Paso – Park/Fire/Engineering/Police
- Future Land Owner/Developers
- Texas Department of Transportation
- El Paso Independent School District and Ysleta Independent School District
- State Park
- Community Groups

Certainly as development occurs over the next 10 years for this property, various codes, ordinances, and other changes to both City and EPWU requirements will change. It is the intent of this planning process that all improvements recommended as a part of this Land Study would be developed in accordance with current codes and ordinances in place at the time of specific phases of development.

TRAFFIC STUDY

The Master Developer will be developing the subject study area in phases and will be required to prepare a “Master Traffic Study” on the whole 6,975 acres and will be done in four (4) phases as shown in the Land Study report. The City of El Paso's Traffic Engineer must approve this Study and the criteria used to develop it.

The developer will be required to conform to the Master Traffic Study when developing each segment or phase. In all cases, the developer will be required to meet a level of service of minimally a level of service “C” but preferably a level of service “B" at full build out, using the Master Study as a basis.

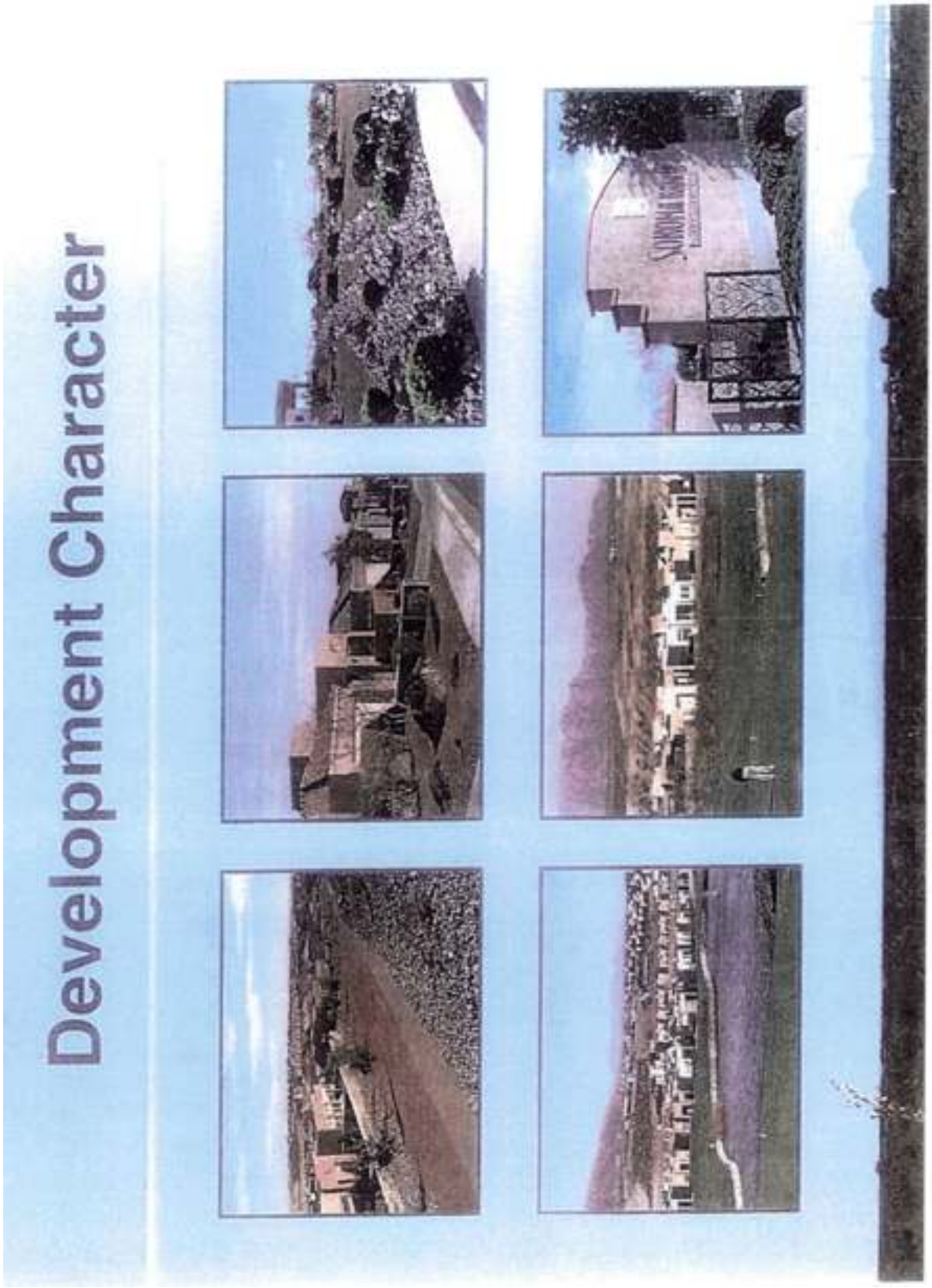
When this study area is fully developed, El Paso Water Utilities Public Service Board will proceed with the next major development to the north and east of the subject study area and access to the proposed Northeast Parkway and Patriot Freeway (US 54) will be mandated.

The Master Plan will include in the major thoroughfare plan, an east to west major or minor arterial connector to the proposed Northeast Parkway at the north side of the proposed development running just north of the Golf course.

Land sale documents must include a requirement that a Traffic Impact study (per the approved Traffic Division Traffic Impact Study guidelines) for the total Master Plan is required and will be submitted to Engineering Department for approval and will include a requirement that the developer will mitigate any impacts on the roadway system connecting the proposed development to the existing roadway system. This mitigation shall include the streets inside the development and the connections to the existing roads and the impact on the interchanges of US54 at McCombs, Sean Haggerty and Martin Luther King. Mitigating measures will include all ROW, design and construction required to maintain minimally a level of service “C” but preferably a level of service “B" at full build out, using the Master Study as a basis.

PSB will reserve the Right-of Way (ROW) required for the NE Parkway when the Texas Department of Transportation (TxDOT) finalizes the exact location of the Northeast Parkway and furnishes El Paso Water Utilities Public Service Board with a certified survey. For payment to El Paso Water Utilities Public Service (EPWU/PSB) by TxDOT for the designated ROW for the proposed Northeast Parkway, the EPWU/PSB shall prepare and submit an ordinance authorizing the City Manager to sign a Special Warranty Deed conveying the property to TxDOT.

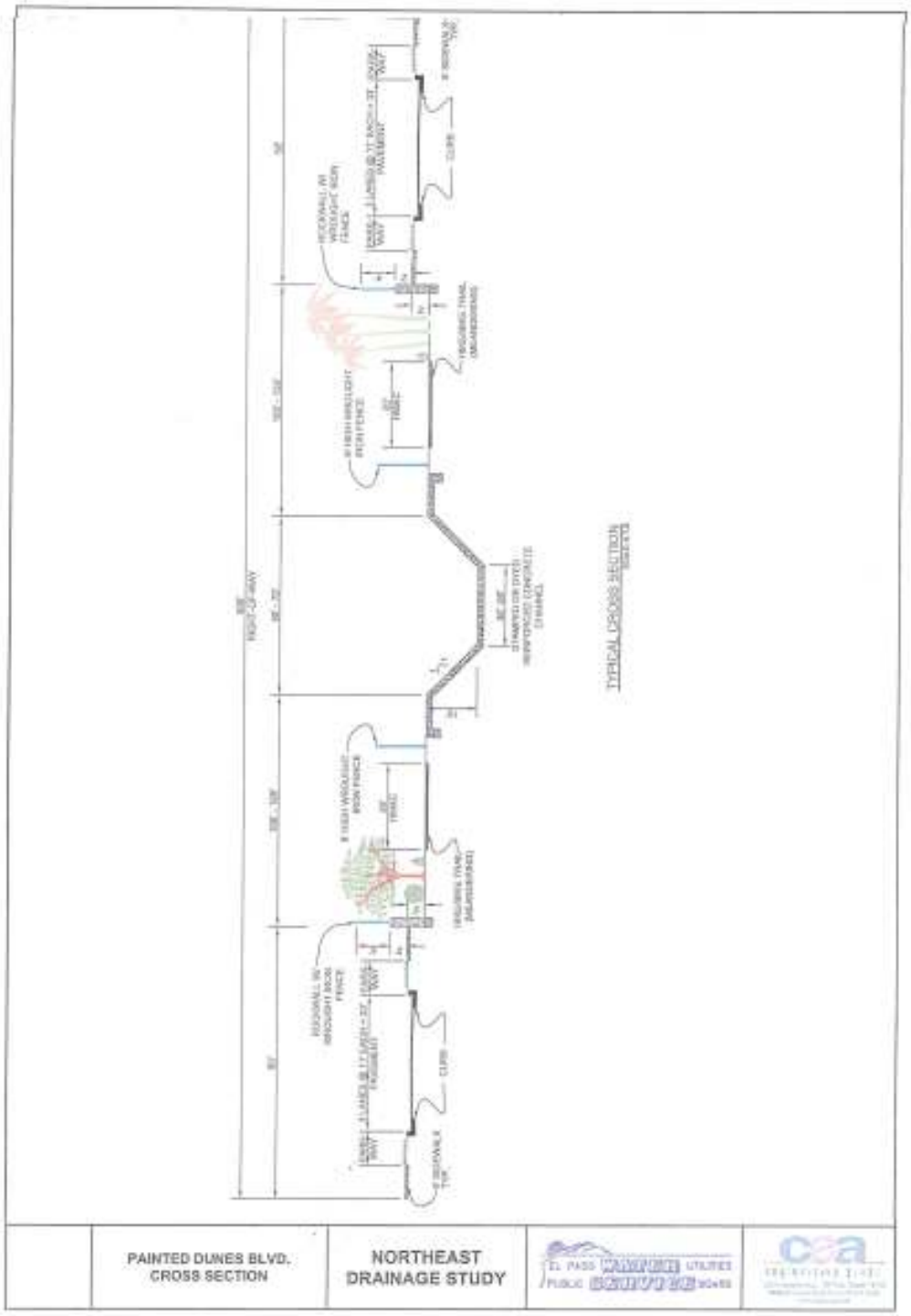
Appendices


Development Character

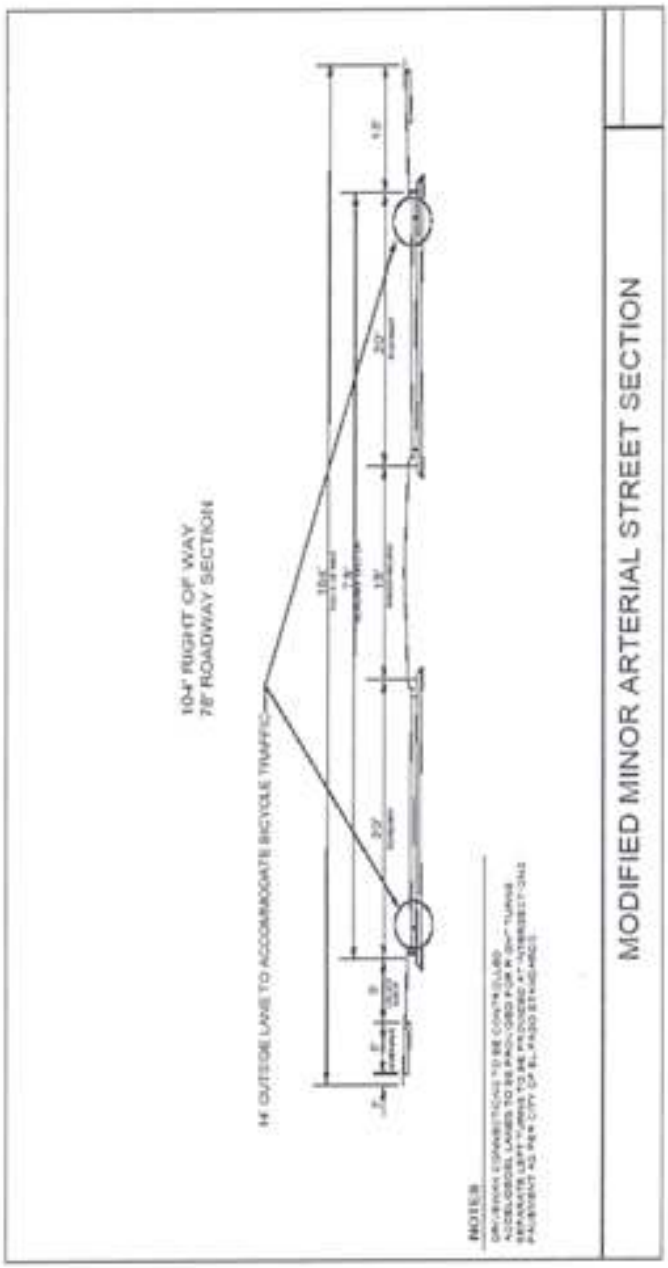
Streets & Bike Paths Design Guidelines

Streets and Bikes Paths

- Major Arterials – Distinguish with strong, formal planting schemes and vertical plant materials, incorporate hike/bike trails.
- Minor Arterials – distinguish with informal, native planting schemes, incorporate hike/bike system
- Refer to the city of El Paso roadway sections for more guidelines


PAINTED DUNES BLVD.
CROSS SECTION
NORTHEAST
DRAINAGE STUDY

Proposed McCombs X-Section



Trail Heads and Trails Design Guidelines

Trails

- Multi-Use Trials
  - 8' – 10' wide clear trail width – asphalt paved
  - ADA compliant
  - Minimum 2' clear zone – (refers to the area on sides of trail between the traveled surface and any obstruction)
  - Facilities
    - Picnic Tables
    - Benches
    - Trash Receptacles
    - Information Kiosk
  - Minimal Landscaping
- Developed Trails (Paseo del Norte)
  - 6' Concrete Sidewalk
  - 10' asphalt Hike/Bike Trail
  - Landscaping
- Developed Trails (Minor Arterials)
  - 5' Concrete Sidewalk
  - 5' Bike Lane (In Roadway)
  - Landscaping

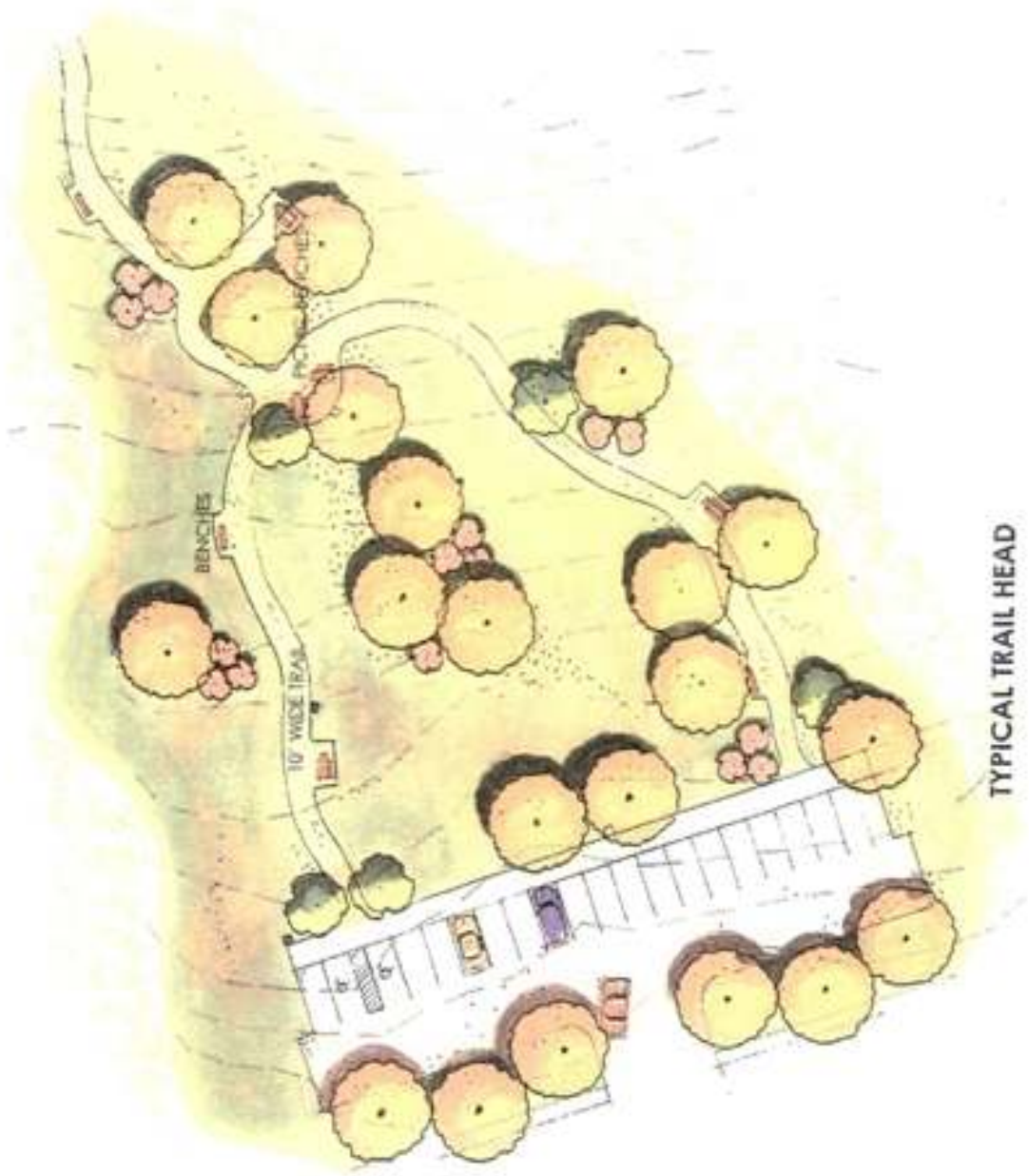
- Undeveloped Trails
  - 6' wide trail width – existing soil
  - Minimal development or construction required
  - No landscaping required (existing natural vegetation to remain)
  - Used for more challenging hiking and mountain biking

Refer to *A Comprehensive Parks and Open Space Plan* published by the City of El Paso for more guidelines

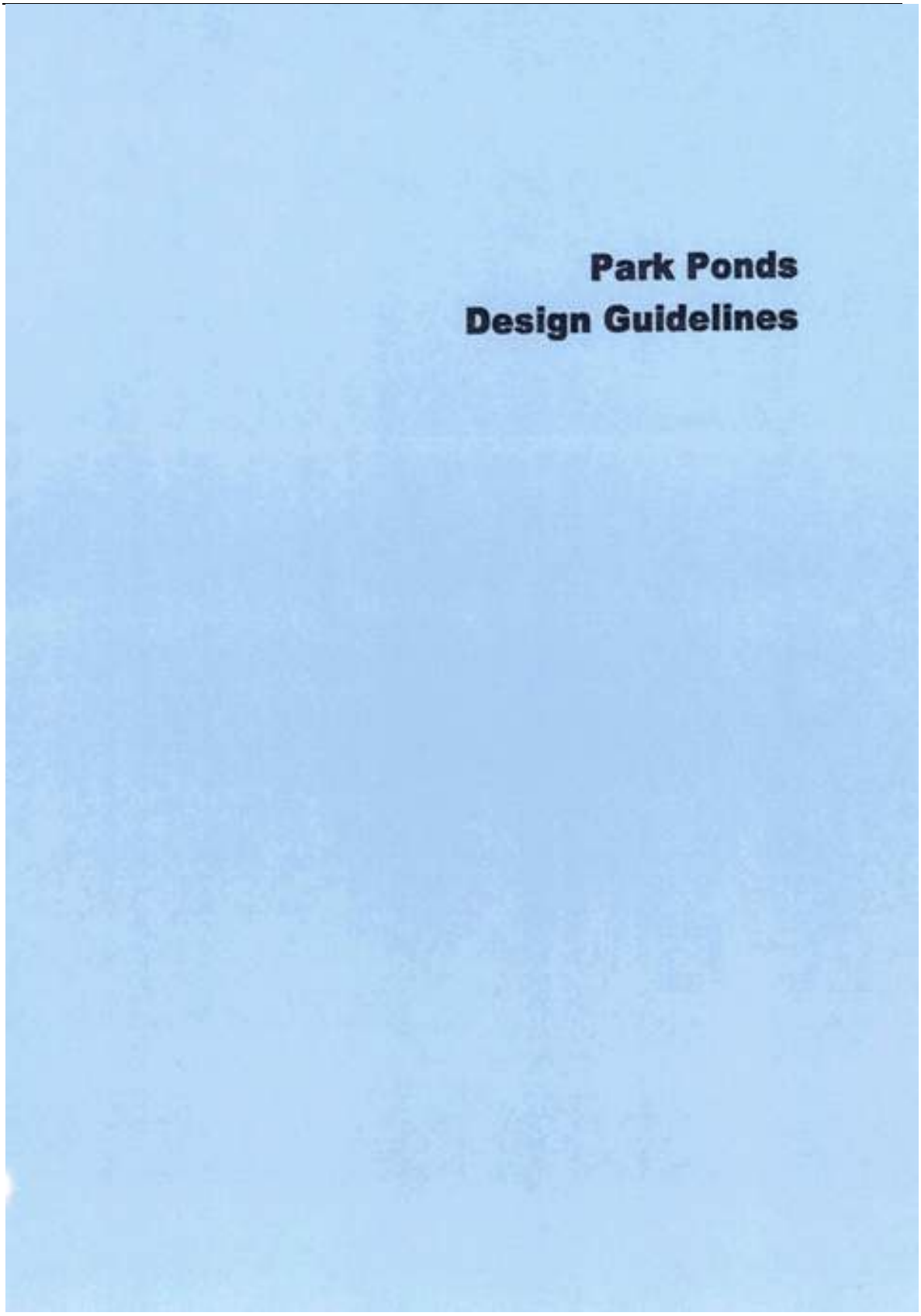
Trail Head

- Adequate parking area
- Designated entry into the State Park

TYPICAL TRAIL SECTIONS
MULTI-USE TRAILS
UNDEVELOPED HIKE/BIKE TRAILS
MINOR ARTERIAL STREETS
DEVELOPED HIKE/BIKE TRAILS
PROPERTY LINE
5' PKWY
5' SDWK
5' BIKE LN

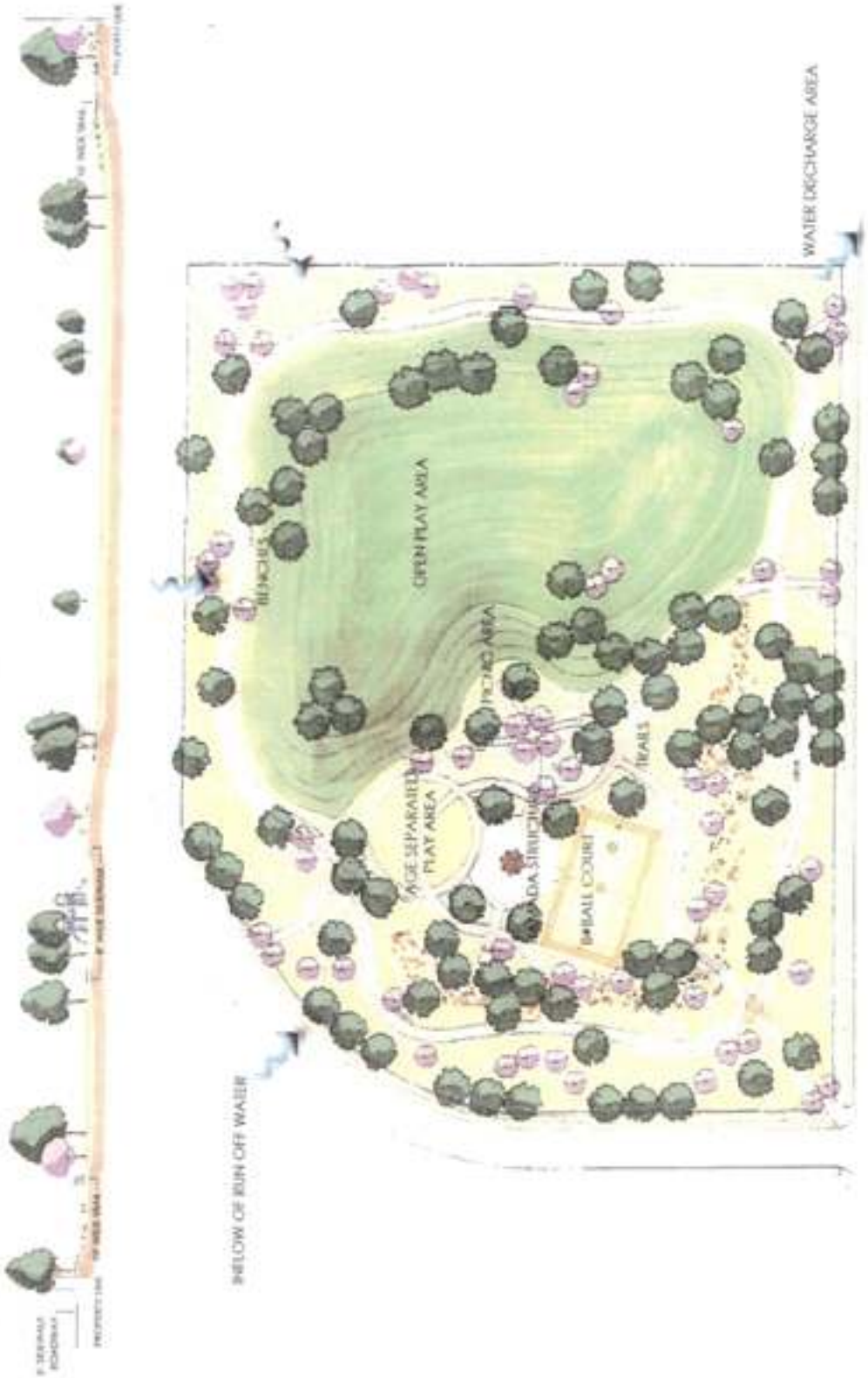


TYPICAL TRAIL HEAD

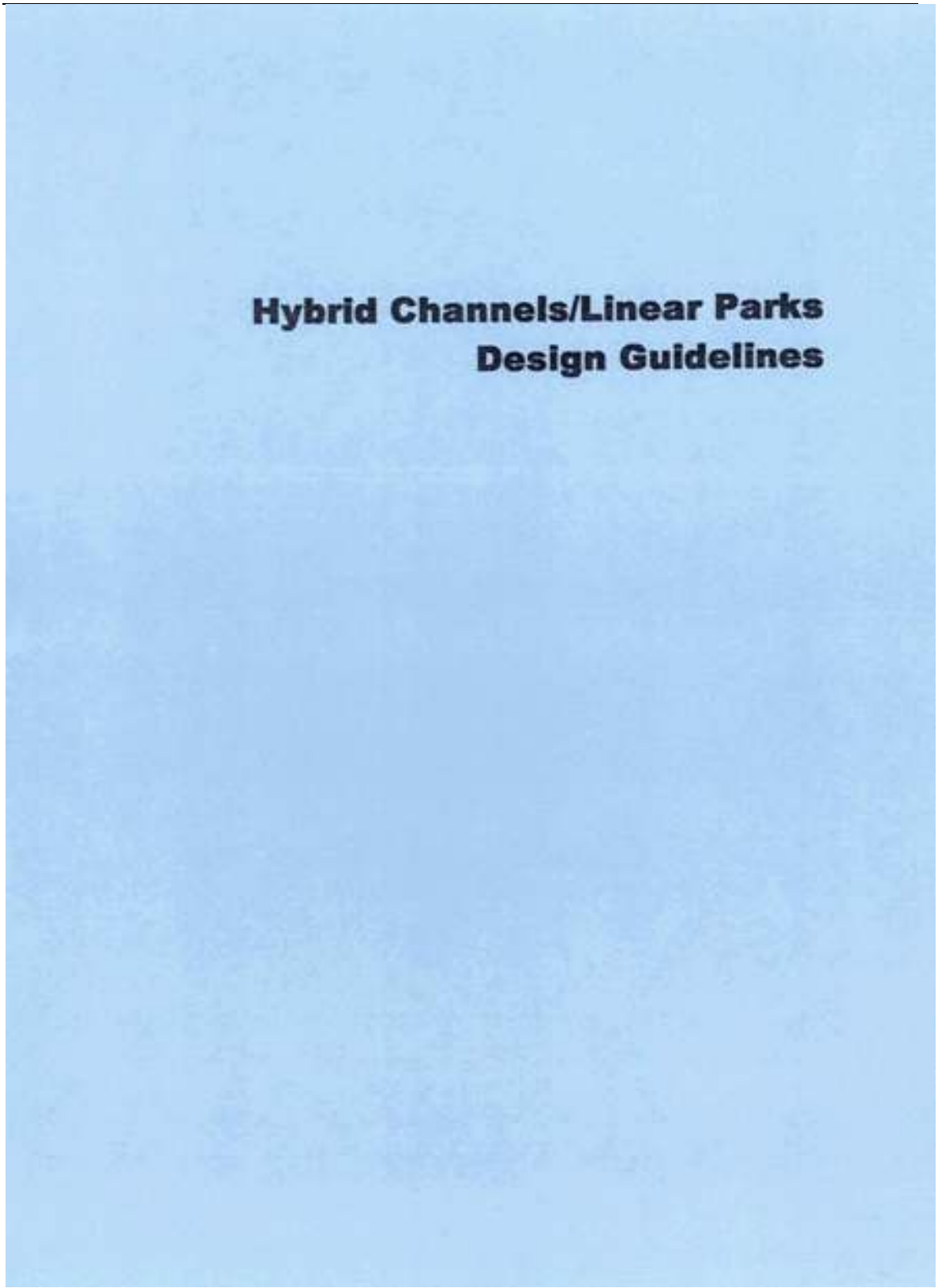

Park Ponds
Design Guidelines

Park / Pond Design Guidelines

- Accessibility
- Shallow Depths (3-6 ft desirable)
- Flat Side Slopes (4:1 desirable)
- Recreational Uses
- Detention Facilities



TYPICAL PARK/POND



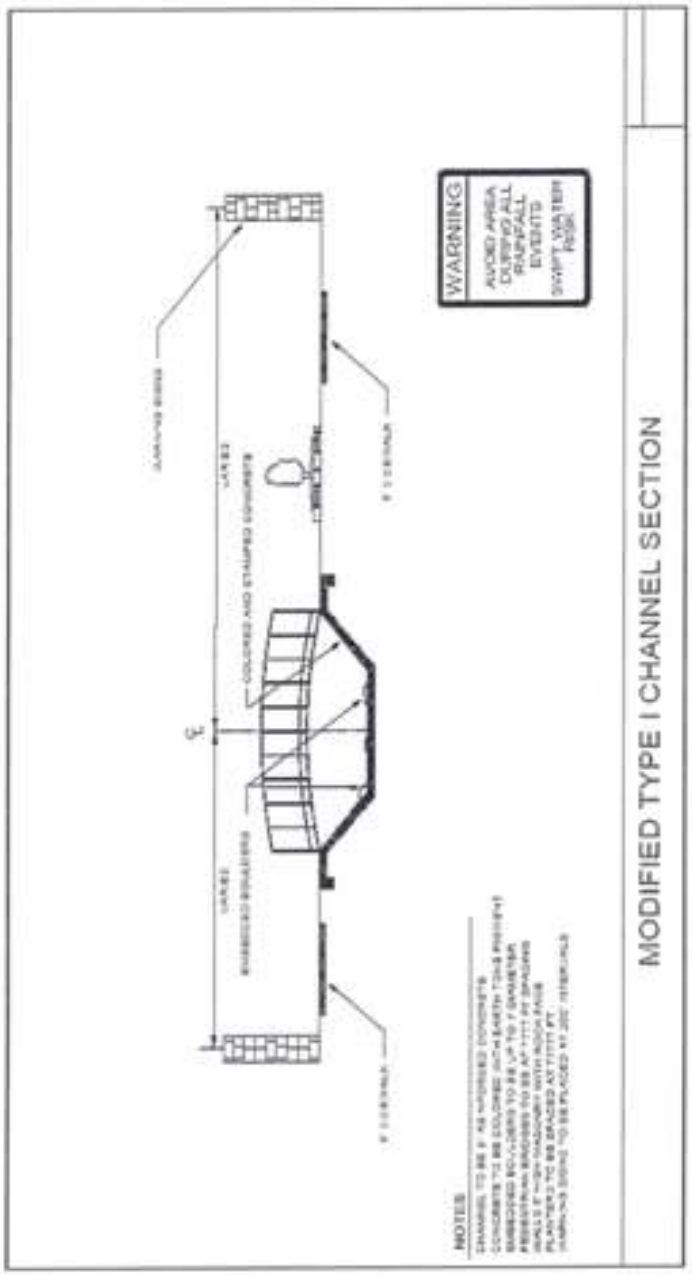
Hybrid Channel

- Environmentally Compatible Materials
- Non-Obtrusive
- Integrated Trail System
- Linear Park Amenities
- Safety
- Recreational Uses
- Connectivity (Trails, Neighborhood, etc)
- Adequate Runoff Conveyance

Linear Park

- Accessibility
- Shadow Depths (3-6 ft desirable)
- Flat Side Slopes (4:1 desirable)
- Recreational Uses
- Detention Facilities

Proposed Channel X-Section



Development Program

Program Potentials

Fort Bliss Housing Demand – Opportunity

Housing Demand - Opportunity	2006	2007	2008	2009	2010	5 Year Total
Military Demand: DirectGrowth						
Troops (net new)	3,690	1,622	6,265	4,144	4,404	20,125
Housing needed off base	2,210	970	3,760	2,490	2,640	12,070
Civilian Base Employees (net new)	229	229	229	229	229	1,147
Housing needed off base	229	229	229	229	229	1,147
Housing Needed - Direct Growth - Gross	2,439	1,199	3,989	2,719	2,869	13,217
Housing Needed - Direct Growth - For Sale	1,537	756	2,513	1,713	1,808	8,327
Military Demand: Indirect and Induced Growth						
Jobs (net new)	7,621	3,350	12,940	8,559	9,096	41,566
New Residents to El Paso	5,030	2,211	8,540	5,649	6,003	27,434
Housing Needed - Indirect and Induced Growth - Gross	4,192	1,843	7,117	4,707	5,003	22,861
Housing Needed - Indirect and Induced Growth - For Sale	2,641	1,161	4,484	2,966	3,152	14,403
Military Demand: For-Sale Housing Units Needed	*4,178*	*1,916*	*6,997*	*4,679*	*4,959*	*22,729*
Historic Annual Housing Absorption	4,000	4,000	4,000	4,000	4,000	20,000
Estimated Total For-Sale Housing Demand	**8,178**	**5,916**	**10,997**	**8,679**	**8,959**	**42,729**
Military Demand: Total Rental Housing Units Needed	*2,454*	*1,126*	*4,109*	*2,748*	*2,913*	*13,349*

Tentative & Preliminary

Program Potentials

Estimated Market Demand for New Housing, Site & Product Specific 2005-2010

Market Segment	Annual Market Demand (Owner Occupied)	Capture Rate	Potential Captured Units Annually	Potential Captured Units 5 Year Program
Senior				
- Market	300	13% - 20%	40 - 60	200 - 300
- Created Demand	100	60% - 70%	60 - 70	300 - 350
			100 - 130	*500 - 650*
Market Rate Homes				
- Market	800	10% - 15%	80 - 120	400 - 600
- Military (Direct)	260	15% - 20%	40 - 50	200 - 250
- Military (Indirect and Induced)	920	15% - 20%	140 - 180	700 - 900
			260 - 350	*1,300 - 1,750*
Luxury Homes				
- Market	400	10% - 15%	40 - 60	200 - 300
- Military (Direct)	170	12% - 15%	20 - 30	100 - 150
- Military (Indirect and Induced)	690	12% - 15%	*80 - 100*	*400 - 500*
			140 - 190	*700 - 950*
Entry Level				
- Market	3,000	4% - 5%	120 - 150	600 - 750
- Military (Direct)	1,280	8% - 10%	100 - 130	500 - 650
- Military (Indirect and Induced)	690	8% - 10%	60 - 70	300 - 350
			280 - 350	*1,400 - 1,750*
Total	**8,610**	**9.1% - 11.8%**	**780 - 1,020**	**3,900 - 5,100**

Tentative & Preliminary

Product Characteristics

		Lots			Homes			
		Width x Depth	Square Feet	Finished Lot Sales Price	Bed/Bath	Sq Ft	Price per avg unit	Price PSF
Senior								
Senior 1	MF, Duplex	35' x 110'	3,850 Sq Ft	$24,800	2 / 2	1,300 Sq Ft	$124,000	$95
Senior 2	Zero Lot Line / Courtyard	50' x 130'	6,500 Sq Ft	$28,800	2 + den / 2	1,800 Sq Ft	$144,000	$80
Senior 3	SF Detached	55' x 110'	6,050 Sq Ft	$34,000	2 + den / 2	2,000 Sq Ft	$170,000	$85
Entry Level								
Affordable 1	SF, Detached	50' x 100'	5,000 Sq Ft	$22,400	3 / 2	1,600 Sq Ft	$112,000	$70
Affordable 2	SF, Detached	55' x 105'	5,775 Sq Ft	$25,200	4 / 2.5	1,800 Sq Ft	$126,000	$70
Market Standard								
Standard 1	MF, Townhomes	35' x 110'	3,850 Sq Ft	$24,000	3 / 2.5	1,600 Sq Ft	$120,000	$75
Standard 2	SF, Detached	65' x 110'	7,150 Sq Ft	$30,000	3 + den / 2.5	2,000 Sq Ft	$150,000	$75
Standard 3	SF, Detached	70' x 110'	7,700 Sq Ft	$36,000	4 / 3	2,400 Sq Ft	$180,000	$75
Luxury								
Luxury 1	SF, Detached	75' x 120'	9,000 Sq Ft	$53,200	3 + den / 2.5	2,800 Sq Ft	$266,000	$95
Luxury 2	SF, Detached	80' x 120'	9,600 Sq Ft	$60,000	4 + den / 3.5	3,000 Sq Ft	$300,000	$100

Tentative & Preliminary

Development Program

		Bedrooms	Bathrooms	Unit Square Feet	Base Price per Unit	Total Units (5 yrs) Base Case	Total Units (5 yrs) Opportunity Case
Senior							
Senior 1	MF, Duplex	2.0	2.0	1,300 Sq Ft	$124,000	100	130
Senior 2	Zero Lot Line / Courtyard	2 + den	2.0	1,800 Sq Ft	$144,000	150	195
Senior 3	SF Detached	2 + den	2.0	2,000 Sq Ft	$170,000	250	325
Total						*500*	*650*
Entry Level							
Entry Level 1	SF, Detached	3.0	2.0	1,600 Sq Ft	$112,000	560	700
Entry Level 2	SF, Detached	4.0	2.5	1,800 Sq Ft	$126,000	840	1,050
Total						*1,400*	*1,750*
Standard							
Standard 1	MF, Townhomes	3.0	2.5	1,600 Sq Ft	$120,000	130	175
Standard 2	SF, Detached	3 + den	2.5	2,000 Sq Ft	$150,000	780	1,050
Standard 3	SF, Detached	4.0	3.0	2,400 Sq Ft	$180,000	390	525
Total						*1,300*	*1,750*
Luxury							
Luxury 1	SF, Detached	3 + den	2.5	2,800 Sq Ft	$266,000	420	570
Luxury 2	SF, Detached	4 + den	3.5	3,000 Sq Ft	$300,000	280	380
Total						*700*	*950*
Total						*3,900*	*5,100*

Senior

Entry Level

Luxury

5-Year Acreage Demand

Market Segment	Potential Unit Capture (Annually)	Units per Acre	Potential Captured Acres: Annually	Potential Captured Acres: 5 Year Program	
Senior					
- Market	40 - 60	3.5 - 4.0	10 - 20	50 - 100	
- Created Demand	60 - 70	3.5 - 4.0	20 - 20	100 - 100	
			30 - 40	*150 - 200*	Senior
Market Rate Homes					
- Market	80 - 120	3.0 - 3.5	20 - 40	100 - 200	
- Military (Direct)	40 - 50	3.0 - 3.5	10 - 20	50 - 100	
- Military (Indirect and Induced)	140 - 180	3.0 - 3.5	40 - 60	200 - 300	Market
			70 - 120	*350 - 600*	Standard
Luxury Homes					
- Market	40 - 60	2.5 - 3.0	10 - 20	50 - 100	
- Military (Direct)	20 - 30	2.5 - 3.0	10 - 10	50 - 50	
- Military (Indirect and Induced)	80 - 100	2.5 - 3.0	30 - 40	150 - 200	
			50 - 70	*250 - 350*	Luxury
Entry Level					
- Market	120 - 150	5.0 - 5.5	20 - 30	100 - 150	
- Military (Direct)	100 - 130	5.0 - 5.5	20 - 30	100 - 150	
- Military (Indirect and Induced)	60 - 70	5.0 - 5.5	10 - 10	50 - 50	Entry
			50 - 70	*250 - 350*	Level
Total	**780 - 1,020**	**3.5 - 4.0**	**200 - 300**	**1,000 - 1,500**	

65% Buildable *20% Open Space* *15% Infrastructure*

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Title: Land Study for Northeast PSB Properties
Subject:
Author: sbustill
Keywords:
Comments:
Creation Date: 11/9/2006 3:57:00 PM
Change Number: 21
Last Saved On: 11/10/2006 10:59:00 AM
Last Saved By: default
Total Editing Time: 268 Minutes
Last Printed On: 11/10/2006 11:08:00 AM
As of Last Complete Printing
Number of Pages: 91
Number of Words: 11,989 (approx.)
Number of Characters: 68,340 (approx.)